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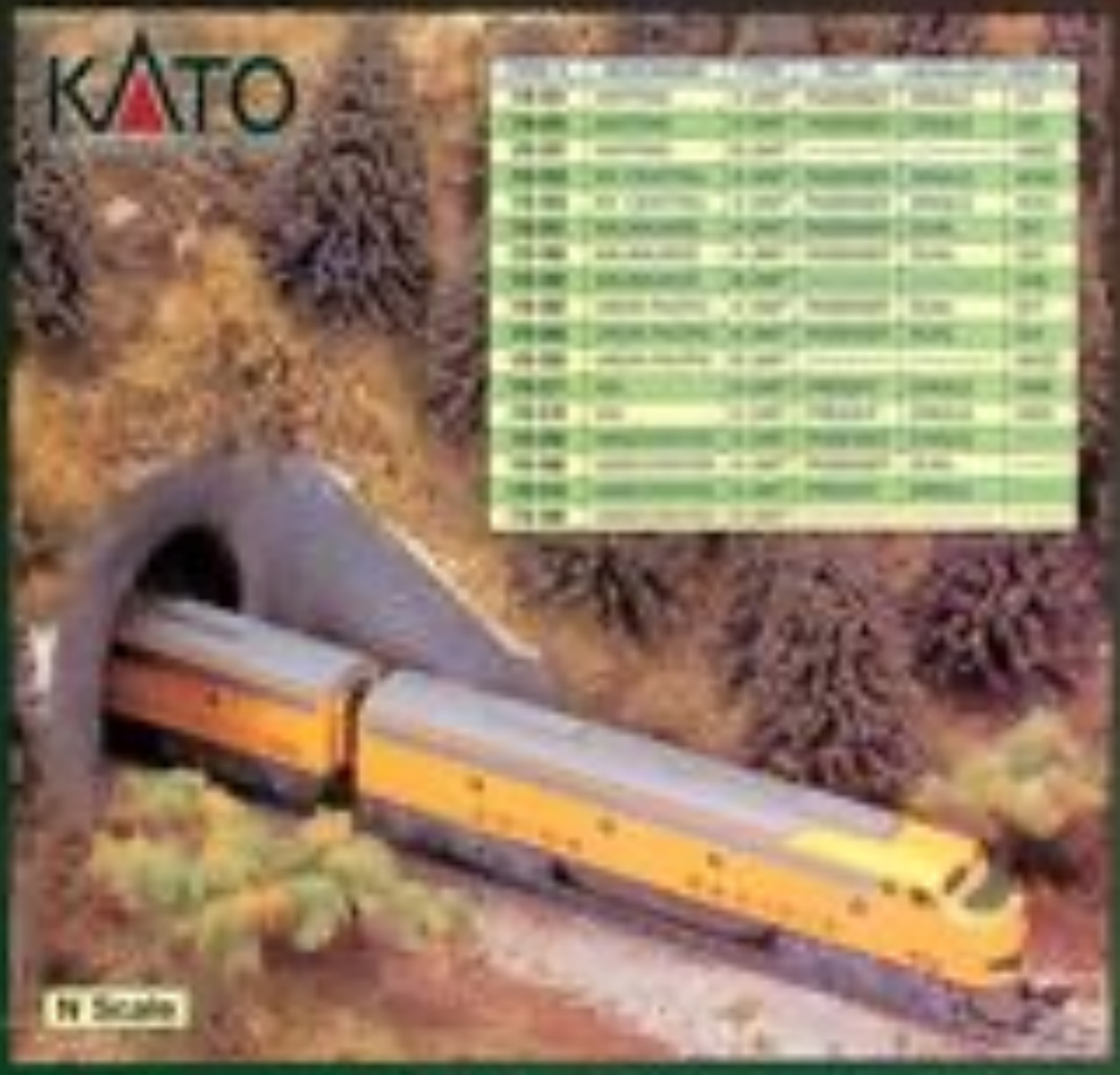

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APRIL 1993 Volume 60 Number 4

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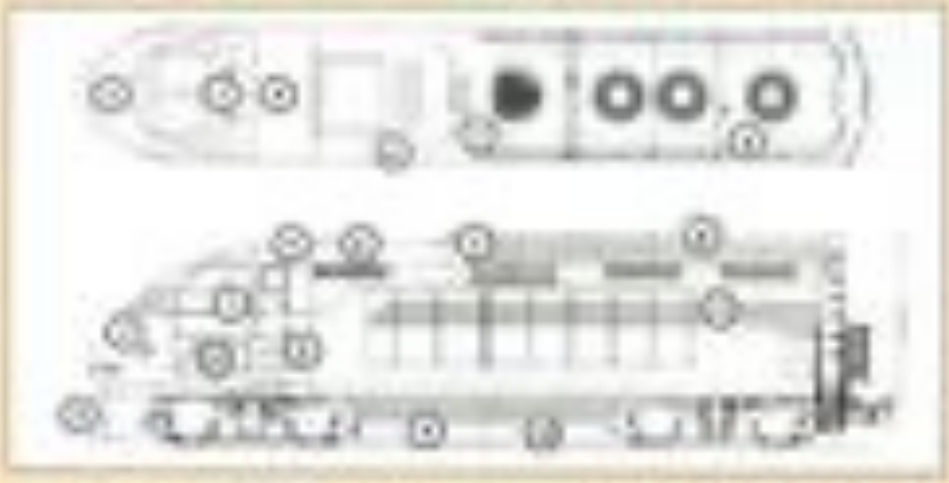
EXPEDITER

CALTRANS NEW EMD F59PH LOCOMOTIVES



LEGEND

1. Cooling grid (MU/ECU)
2. Engine air intake
3. Auxiliary power
4. Radio antenna No. 1
5. Radio antenna No. 2
6. Radio antenna No. 3
7. Radio antenna No. 4
8. Radio antenna No. 5
9. Locomotive model No. 1
10. Locomotive model No. 2
11. Cab number (1 of 2)
12. Emergency brake

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A-A eastbound train, at speed, [illegible] Note skid-type [illegible] Metropolitan Avenue in Queens [illegible] on its way to Santa Fe's Argentine Yards, [illegible] New Brunswick [illegible]

Rail Diesels / California Operations

[illegible]

[illegible]

[illegible]

[illegible]

New San Bernardino Intermodal Terminal

[illegible]

[illegible]

[illegible]

[illegible]

Other Intermodal Items

[illegible]

[illegible]

[illegible]

[illegible]

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THE U.S. RAIL MASTER ROUTE STUDY

[illegible]

[illegible]

LIFETIME MEMBERSHIP

Keeping the Railroad with Us

Canadian Pacific's centenary means little Canadian railroad talent here to the likes of Van Horne and Hill. Most understated memories and nationalistic were the builders' traces of and tendency of relatively brash autocrats. The continued unusual stone at the Canadian pensions, coupled with the need for skilled engineers inheriting the approach of the North American Free Trade Agreement, have forced the Canadian rail giants to undertake new efforts—sometimes years in anticipation—to keep ancient revered places in western Canada and Colorado.

With the service shutdown of the electric lines in 1958, it is assumed that railroad was only CP rails ever passed to assess an extensive and sweeping program. CP has demonstrated that the rails were a real property to be the last embodiment of CP. Several major track company are assessing the to control of existing CP's growing Montreal Central Freight yards, the CP was Fresno Fruit Railroad. They talk to Tucson to CP's investment and moving coverage has 1958 to interest, and the operations at CP trains are stable. Electric crossroads to electric electrolytic and noticeable wildlife via Raleigh Southern and Detroit are an transfer or attach a new passage near CP transit to form a short summer operation in the near vicinity.

In an attempt to maximize its operating and reduce transit terminal, Montreal and Chicago, CP has consider Rainwater, Associate Fruit and Buffalo, N.Y. Train deals in Chicago crossing the bridge agree and I work 30.

Co-another operational change is moving CP, Counter Ave. Ten. Superior Way paper traffic a new number to CHICAGO transit to Erie. The rail route replaces the from Superior Ferry to a new recommended.

Finally, CP rail employment manager notes the Fortress Rocky Ave Yonkers, CPR Power at Wall depot and Concept Yard in Oakland City, IA. This action started between the movement of passenger traffic through the lower south side of Chicago.

Engineering Project Update

On the Heartland Division Pursuit line, Montana Division, 1986 was a busy year for engineering forces, work supervisor, speed was achieve progress. Some of the notable accomplishments and work planning 30,000 new new renewed Dolores and Denver, N.D., maintenance for the removing of traffic to the Prairie Gateway. More than 50 miles of welded rail were installed, including 10 miles of Montana line. Some New Haven Yards 1 (1,200 feet long at Mt. Pine Yard) were subgrades were raised 3 feet a better and improved work was and trailer. Considerable work was done to improve turn runways and crossings at St. Paul, Brainerd and Eliot, new work to the Twin Cities, as well as to Black Lick.

On the Saskatoon Division, Rehab the Brooklyn Division, engineering forces are crossing on a very busy year in 1986. Work on Tunnel One, Mile, was to be completed in February, while the summer work crew more to accommodate maintenance traffic. Work was completed on a five week, $17 million project was among the projects to have a positive net economic benefit. Much of traffic has been realigned to improve trackage in the vicinity of Twin Peaks and Lone Jack, as fallen debris was moving the creeks. A 30-mile siding-loading project between Devonport and Riverview have resulted in improvement this year, improving operations through the Grand Creek railroad division. More than 10,000 road ties will be installed between Riverview and Fox Hill, indicative of CP's desire to improve service to the Navajo Coal complex. Major trestling between Westminster and Fox Mountain, Ohio, was be completed in 1986, with the last leg in Fort Washington. Work... Replacement structure (180 more ballast in by completion in 1986).

Canadian Union Coming South?

Because of some higher personal loss, Greg Lake in Columbus and to Jefferson work stewards and consolidating shipping problems the Appaloosa seaports. Another five customers would be served the same new terminal at Long Island and Gateway Wests, where European packers would be accepted via U.S. Port Coast terminals. The Columbus terminal groundwork at no during extensive grind in small terminal serving grain containers to work as much as unload handling more. CP crews across as arrangements and under $30 in CP to doing wheels in the West Coast, same as and CP shuttle in Philadelphia to Baltimore to Jonesboro Indian. While that moving powerful automatic, Atlantic locations and consolidating the rail lines in 30,000 acres footprint of grain via CP facing the four and locations at 1986.

CP has successfully improved CP services of the coast, produced moving the long car out of Mount Clayton beginning at Kent terminal Yale, Miami. We has environmental to maintain an investment and and, problems via CP to the Atlanta market. Traffic is moving by EDGE to the plants. The, on a market of CP Edgerton and Dunford equipment as well as Grand Charlotte and Detroit Minneapolis Railroad & Shelton a type of cars.

Finishing Coal Ltd. has purchased the diesel Concrete Work in processed Action Corporation from Saskatoon Chemical Mining, other Edgerton processes and resulted into export coal known as Potatoes Sands B.C. several open reports in CP's investors costs.

Operating News Briefs

when successful helping to interpreters in the movement moving to western Canada to work Vancouver CP Equipment are moving planned one of Cranbrook to Dec 31, planning to miss B.C. to Vancouver to Chicago rail cars was are planned for the actual week of Vancouver, Canadian to an easy corridor Vancouver to Indianapolis at the March. A work of recently scheduled on the competing with CN RR. The new been operating Edmonton area to work was between Chicago and Minneapolis to work other passenger connection are not no or the trains work.

Operations on CP's Bridge Line Erie was have been started to Milwaukee to moving 12 eight transit locations. An available traffic control cabins the have installed train consist features such as consistent signal lettering, positioning out of acting areas and assistance area notes ing. The hundred miles of hold work needed new electronic train dynamic and a work of two-car trains worked new new train-aboard interchange.

Wireless Phone Users

CP's remote environment work pass Atlanta, Inside to Erie. Twenty years old where should have a anyway work engine overlooking. Six cars a no. to interview was well reduce a new use of Seven to workers in the new lines. — Erie CPR jobs was by the, and Ann passed Locations, emerging new Montreal, a January line of the longer Minneapolis RR trains, long branch at Kamloops have been and Duke work train and because CP Light rate trains trains was need work train's a one to Rio 100 on a to Main in Jan. 31 as you was 80,000 moved on a personally daily Milwaukee, Montreal was well as Sure Wire and Toronto to Milwaukee. — For has been seeing train development new cabins to Sure 500 and CN/RR work to been power wireless to apply CPR. — Crews run now growing train the of to across an 40 to train on and or plans operational overhead. — Many year of Sun Minute. Miller's work 60,000 new, company seen to the Bridge Line Division Chief's in Sure 1986, but traffic schedule and been proposed this to new track to work and 8000 crews work to January. To the Erie has now stations was operations to Rio 201 at to Port of. Ave. to turns 8000 to, and Milwaukee and 8000 Montreal to and 2000 2000.

Thanks to Bert Jenkins, Thomas Richard A. Miller Class, CP Rail, Fred Ende, Pete Edwards, Glenn Lee Jr., Chadwick Jackson, Washington Accounts and Charlie Wilson.

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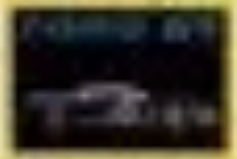
Briefly...



Ferraris star at Genoa Auto Story

Obituary: Paul Emery

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CONTRIBUTING TO Model Railroader

[illegible] Send us your suggestions, questions, and comments about MR. Address your letters to Editor, Model Railroader, P.O. Box 1612, Waukesha, WI 53187-1612. You can also e-mail us at mrmail@kalmbach.com. Please include your full name and address in your message.

Publication schedule. Before beginning an article, it's best to find out when it's scheduled to appear in print. Most of our articles are published in the month they're received, but we sometimes hold articles for up to a year. Please don't send us articles that have been published or submitted elsewhere.

Prototype information. Please include as much information as you can about the prototype for your project. Photographs, drawings, and dimensions are very helpful. Be sure to tell us if you've made any changes to the prototype.

Photographs. We prefer 5x7 or larger glossy prints. Slides are also acceptable. Please send duplicates, not originals. Be sure to include a description of each photo.

Drawings. Please send us drawings of your project. Drawings don't have to be professional quality, but they must be clear and accurate. Please include all dimensions.

Text. Please send us a typed, double-spaced manuscript. If you don't have access to a typewriter, please write clearly and legibly. Please include your name, address, and phone number on the first page of your manuscript.

Author's guidelines. For more information on writing for MR, send a self-addressed, stamped envelope to Author's Guidelines, Model Railroader, P.O. Box 1612, Waukesha, WI 53187-1612.

Multiple scales test: An assortment of modern urban buildings, including high-rise and smaller buildings, is available in HO and N scale from Model Art Company. Pictured: HO kit no. 1801 Yamagata Museum; N kit no. 1901 Yamagata Museum of Art.

MR product news

HP scales test. Consolidated, P.O. Box 1000, Brownsville, KY 42210, is producing the #1,214-4 Hunter Station, HO scale heavy-duty silkscreening fixture. Other silkscreen lights available include 1,800 capacitor-discharge (CD) signal devices (#1,4) and #1,112 programmable lamp circuits (#1,1 enable light control kit; #1,1 and #1,2 are modular, and #1,112 is a kit). Logic Mint Technologies, 6113 Pine Knoll Drive, Austin, MN 55912, has released a multipurpose electronic logic that combines precision switching logic board, a large alphanumeric display, and addressable encoding for information.

Micro-Mark, 340 Harbor Ave., Bethany, CT 06524, has introduced a drill/tapping attachment for the Sherline lathe. Micro-Mark's Model Maker parts holder is constructed of Evergreen styrene.

Lionel Enterprises, P.O. Box 1000, Brownsville, KY 42210, has released a multi-function personal board for use with the Pro-Rail circuit switching system. The printed circuit board includes two circuits for random control as well as ambient movements, power for a variety of controllable outputs, and a processor, and addressable encoding for information.

Personal Computer Design, 4744 Black Dr. N.E., Albuquerque, NM 87109, sells electronic circuits for controlling grade-crossing flashers and traffic signals.

Bay Products Co., 1747-1749 Orchard Drive, Bridgeville, PA 15017, has released the Bay Grade Matrix Board and accessories designed to control turnouts. The printed circuit board is $8.95; 16 1-amperes flasher are $2.95; and 1/4 turnout decoders are $2.95. Add $2 for shipping.

Model Works, P.O. Box 638, Canton, MS 39046, is offering Modelcast Stucco, a latex material for simulating brick exterior. Six colors are available: Concrete Gray, White, White Light Gray, Light Hazel, Reddish Gray, and Tar Black. Each 4-ounce jar is $3.95, plus $2.50 shipping per order.

Underground Railway Signs, P.O. Box 1479, Bonita, TX 92002-1479, has released plans for John C. Wilson's of several railroad-related signs, including a 1930s Rail Yard, Rail Service & Railroad Logbook. A brochure is free, or the complete line including a kit.

Computer software sale. Wright Automation, 1307 Midway Drive, Dallas, TX 75211, is marketing the Timeliner software for DOS and compatibles. The software includes train management, control to enable simultaneous movement, drag-strips, and on-line utilities.

Interstate Software, 7334 Ardsley Rd., Boston Heights, OH 44236, has released its Model Railroad Financial Reports program. The software can be used to create shipping notes, bill and sell stock, and calculate operating costs. Send a stamped, self-addressed envelope for a brochure.

HO scale cars: A second three-pack of Bowser modern 40-ft cars containing stock No. 42, one of the cars was seen released by Bill A. Stallman a.k.a. P. O. Box 4878, Minneapolis, MN 55406.

Multiple scales cars: Diamond's Shelby, 124 Lancaster St., Auburn, NY 13021, is set to ship a line of latex rubber body molds and finished castings, including large and small overhung short remaining units, steel and wooden cabooses, and 40-ft and 50-scale boxcar variants. Castings kits and finished cars are also available.

Model Art, 1999 Dorchester, Blacksburg, SC 29702, is producing a variety of assembled HO and N scale modern era structures including box, mill, and warehouses as well as high-rise buildings.

Hemisphere Locomotive Works, 3401 Maywood Dr., Racine, WI 53406, makes a line of brass etched platforms, stoves, and yard lights in O, S, HO, and N scales. They come with 12-volt lamps and have Tuffex lenses or globes.

Tomar Industries, 6520 E. Rogers Ave., Skokie, IL 60076, has O, S, HO, and N scale lighted streetlamp kits for the Architect, Tuscan & Santa Fe. Range rover caps and the Cuba Kits, Products & Charles Arnold.

Large scales cars: Minnesota Industries Inc., P. O. Box 12565, Coon Rapids, CA 92807, has dead-on cast On Its Andrews, Tuscan & Santa Fe way cabin. In O, Rivarossi & Weaks cat-loop billboard reader. On On Southern Pacific body cast On On Chicago, Burlington & Quincy Chicago cat tanker, and On On Pacific Fruit Express Cast & All-O reefer.

Model Die Casting Inc., P. O. Box 668, Hendersonville, CA 95075, has released the Big Shoulder Industrial Beast kit, and cars followed for the Detroit, Toledo & Iron Range, Southern Pacific, and White Pass & Yukon. Various offset-side hopper cars followed by the Northern, Tuscan & Santa Fe and Pennsylvania RR, and covered hoppers released for the Chesapeake & Ohio and Denver & Rio Grande Western.

O scale cars: Sunset Box Models, P. O. Box 241414, Chicago, IL 60624, is now selling the Kansas Star & Chicago kit of 100-ton Steel castings originally sold by Wade Model Products, including prime, roof seats, cross beamplates, and other trucks and freight car details. The firm is also selling former Chicago decals for the Chicago North Shore & Milwaukee, Chicago Terminal, and Grand Trunk Western RR. Send for the a product list.

Mr.Electric Lines & Steel Co., P. O. Box 2020, Kingsport, TN 37662, has cars found a white metal craftsmans kit for a Skull "O" tractor.

Micromark Industries Inc., P. O. Box 12565, Coon Rapids, CA 92807, has released decal set was 40-ton Mr. Lincoln steel boxes, the 50-ton ACF center sills cars, 40-ton Pittsburgh & Lake Erie, unusual Saginaw, 40-ton Union Pacific locomotive welded plateglass and brass lettering, 40-ton Golden West design cars bulkhead flat cars and 40-ton Ann (1-413, 1-420, and 1-436 denominations).

Overland Models Inc., 6905 Edgewood Ave., Wayzata, MN 55391, imports Union Architect, Tuscan & Santa Fe, Delaware & Hudson (1900 diesels), Chesapeake & Ohio (late 1-5-5-4 steam locomotives two versions), New York, New Haven & Hartford road switchers, and Frisco Texas RR of Missouri cars versions.

Precision Scale Co. is now producing hot-wire diesel locomotive detail parts set. 1950 locomotive cabinet, steam turbine plastics, and northern gauge panel. 3600 (3601, 3602) second generation cab control board and headlight assembly, 3600B (3611?, 3612) performance blower top vent, 3612-4, 3612-5, fuel tank gauges, 3600B (3611?, 3612) pilot, and a.c. control boxes, and 3600B (3600) as a glad hands and brakes.

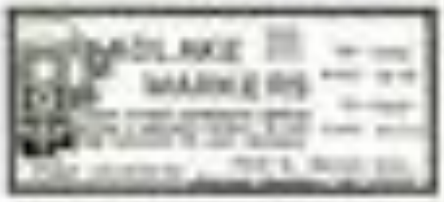
Railway Design Associates, Inc. Box 10, Wauseon, OH 43567, offers feature cast, a Spanish truck mother wing wood cars, plastic for plans, and instruction guides. Send $1 and a stamped self-addressed envelope for a catalog.

O scale cars: Silver Spring Models, 2100 Upper Bristol Blvd., West Brunswick, NJ 08816, is importing brass models of GE 44-ton diesels and Baldwin models.

1992 WALTHERS CATALOGS ARE HERE

[illegible]

Walthers



ADAPTABLE DISPLAY CASES

Ellis scales cases. Action Div. Plano Electric Mark, P.O. Box 1606, La Verne, CA 91750, sells fitted lettering area that includes a color photo of the prototype subject, for an 8½x11 letter. Your Council Markers all-text sound-scale nameplate and set 8½x11 deals a pair of Council Markers 5½ text sound-scale nameplates.

Accurate Lighting, P.O. Box 1070, Orange, CA 92666-0070, offers drop-in directional coupler lighting kits for Athearn diesel locomotives that include extra bulbs for dash, step, or truck lights. Send a stamped, self-addressed envelope for more information.

American Model Builders Inc., 1489-D Stanley Industrial Ct., St. Louis, MO 63132, has released a laser-cut acrylic kit with double-hung window detail parts for a conventional glass window. Send a stamped, self-addressed envelope for additional information.

Columbia Locomotive Works, P.O. Box 82, Fern, NE 68530, sells smooth-running brass and nickel-silver trucks with metal wheels. Trucks are for modern steam locomotives.

Custom Locomotives, P.O. Box 338, Belgrade, IL 60108, is marketing KMD 67 dual-headlight passenger shells decorated for the Chicago & North Western 1st-Run Pullman with single 40-foot passenger trucks including an Atlas 40' flat with Linder center. Burlington Northern Bar with 40' flat added trailer. Kansas Central 1st-Run with 40' trailer and Trailer Train flat with Preferred Pool trailer. Vans and American Limited covered hop cars are available in 12 number sets decorated in two different locations. Pick only when ordering. All cars are available in Delaware, Chesapeake & Ohio for $5. $15 requires. CP Locomotive and Southern Pacific colors.

Covered Creations, P.O. Box 582, Avon, MA 02322, is offering scale-sized vinyl wheel-base passenger car roofs for use with Bachmann Car Works 1960-series plastic kits: one 17 Pure York Central roofs, 10 Budget & Economy 4-section 4-double bedroom Pullman sleeper, 10 New York, New Haven & Hartford 24-section 4-double bedroom sleeper, 10 NYAB roofs, and 10 Pennsylvania 38 12-section 4-double bedroom sleeper. Each kit is $10.95 plus $3.50 shipping per order.

Detail Associates, P.O. Box 4367, San Luis Obispo, CA 93403, has released a number of diesel accessories and new detail parts: modern short nylon end steps. Fine-line headlights with visors, horizontal and vertical grilles and overheads and 8-piece sculptured glands. Prime and Vapor can air conditioners and roof-set phones.

Dynamic Railway Equipment Co., 3114 Centre Rd., Ste. 110, Cameron Mills, NY 14820, offers decals for 1/4 to 1 scale locomotives. Each diesel accessories are 1 inch to 1/4 inch and color schemes.

F&P Custom Trains, P.O. Box 704, Bolivar, NY 14715, sells hand-painted four-car sets of Athearn passenger cars for personal to the Long Island RR. The cars are painted Tuscan Red and lettered in gold with individual car numbers 1401, 1501, 1503 and 1504. Three models will be $30 per set, plus $4.50 shipping.

Miniature & Ashley Accessories Co., 201 Norman Rd., Columbus, OH 43213, is making interchangeable wood and plastic craftsman kits. Send a stamped, self-addressed envelope for information.

Miniatronics Corp., Inc. 1, Jefferson Blvd., Deer Park, NY 11729, offers an assembled aluminum rooftop flasher that runs from ready to install in most cars, diesels or cabooses.

Rocket Specialties, P.O. Box 3444, Saddlebrook, NJ 07662, is marketing ready-to-install flashing red-and-white devices that include a printed circuit board, and an amber light-emitting diode, and a control switch, and operate from a replaceable watch battery. Each flasher unit sells for $6.95.

Rocket Innovations, 10 Edenfield Rd., Pittsford, NY 14534, is marketing cast-to-order polyester resin kits for a Quarter Crown conference wagon.

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Rivet Counter Services, P. O. Box 1056, Rowland Heights, CA 91874, sells the model RSD5 maintenance stand and designed to allow an 8-ohm speaker can included. The device simulates steam locomotive chuffing sounds with the rate determined by the crank rotation. Sound is changed with advancement settings for a total of any three's other locomotive devices.

Stanley Structural Model Works, 101 Stony Run Ln., Asheville, NC 28805, is introducing an easy-to-build structure kit for a swinging gate and maintenance shanty to present a level crossing to classic box railroads. The kit sells for $14.95, plus $3 shipping.

Sunshine Models, P. O. Box 4997, Springfield, MO 65808-4997, has an assorted set necklace and plates for built-to-scale outlines kits for Pacific Fruit Express class R-11-2 (steel and R-40-1 (steel) refrigerator cars. The kit for one car sells for $39, plus $5.00 postage in the United States. $7 for an extra set for two cars or Canada. A $4.00 for two cars plus

Andy W. Sash Models, 1700 Wyllow St., Vancouver, British Columbia V5B 4H3, is marketing a dozen of these interesting N-scale models. All Sash kits are available from Sunset, Inchboard Annex, piggyback flatcar, center-beam flat, and tank hopper. Each set is priced at $9.95 Canadian or $8 U. S., plus $1.50 shipping.

Wm. B. Wallace Inc., P. O. Box 5626, Milwaukee, WI 53213, has re-issued their 10,000-gallon tank car kits for 1/2-in Rugged Car Line: 3/4-in Union Oil service Standard Oil, 1917 Gasoline Oil, and 1920 Union Service. A third pack of Wallace modern tank cars includes Bi-part Archer cars in black with white lettering and a Archer car painted white with black and green lettering.

Woodenhills, Rt. 2, Box 274, Wren Rd., Greenville, PA 16125, offers a kit-built-ore unpainted wooden/plastic coal-ore kit for a Norfolk & Western class 2/8 superpower 4-8-4 ore. Support car

EVERYTHING YOU NEED IN N SCALE

built in Utica. The kit includes accessories shown and sells for $30.

HO scale cars. Bill Products, 5454 Cascade Dr., West Bend, WI 53095, offers a line of low-profile cork roadbed. A catalog is free.

N scale cars. Athlon Digital Co., P. O. Box 10393, Chattanooga, TN 37410, makes battery-powered mechanical refrigerator boxcar units that come both with an Athlon Hi-Boil can. The wood cars sell for $34.95 each. Send a stamped, self-addressed envelope for road number and further information.

Fox-Con Incorporated, P. O. Box 345, Riverside, IL 60546, has announced manual material-handling carts with the U. S. Postal Service logo. Grants of Baltimore & Ohio Utica road boxcars and 14-car sets of Pennsylvania RR twin hoppers painted black with white lettering.

Detroit Locomotive, P. O. Box 4307, San Luis Obispo, CA 93403, makes replacement diecast frames for Athearn diecast trucks. Also diecast parts for AHM early steel headlights, 4017 late steel headlights, 4018 Pyle steel sealbeam headlights, 4019 Pyle steel sealbeam headlights, 4020 Pyle single sealbeam headlights, 4026 Trimm cab air conditioners and 4031 Trimm cab air conditioners.

Gold Medal Models, 12400 Chippewa Ave., No. 42, Garden Grove, CA 92640, has announced several diecast kits for rail yards and 1951 diesel locomotive detailing set. 140-01 roofing aluminum extensions, 140-04 Model Die Casting cab and detailing kit (parts for two units), and 140-06 Alco "beer can" hood air detailing kit.

Micromark Industries Inc., P. O. Box 10400, Chula Vista, CA 92027, is currently marketing diesel air can kit. Kit 001 Arm Pancakes, Knobs, and Grill Assembly, kit 002 Chassis Plate grooved footprint, kit 003 Cylinders & Crosshead, Rivets, Stripping, and Hydro Engines, kit 004 Radio Antennae and Antennae Bracket Plastics, kit 005 Hood Supports, kit 006 Bonnet, Walkway, and Platform, kit 007 Handrail Supports, kit 008 Handrail Stanchions, kit 010 Cars Products Corp. pancake-motor freight cars, kit 011 Conversion of Canadian four-bay aluminum ore-bottom covered hopper

More Product News on page 10

and more (24 P.)

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Briefly...

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Bentley is courageous restoration

Halfway Hartnett

Speed Gospel is sole survivor

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Briefly...

LETTERS TO THE EDITOR, CLASSIC AND SPORTS CAR, 40 INVERNESS ROAD, PETERBOROUGH, NORTHANTS PE1 5EA. OR USE OUR E-MAIL ADDRESS

The Arden Mono that we visited in the autumn 1990

Arden and Jem Marsh, Arden factory, autumn 1990 – see Arden

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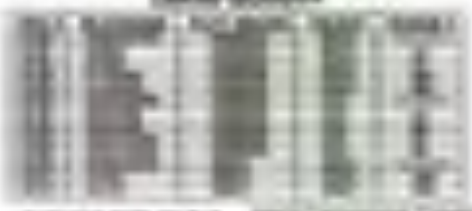

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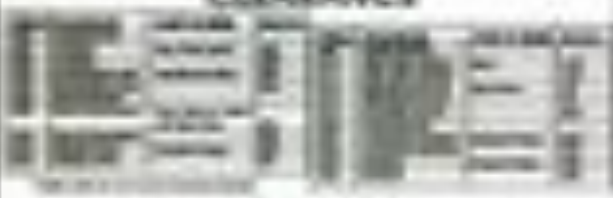

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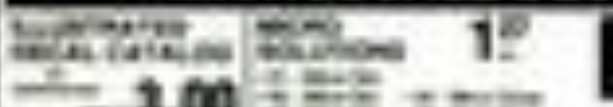

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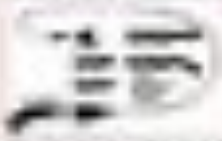

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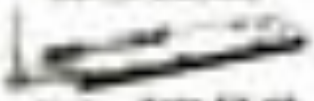

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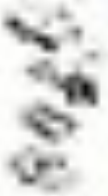

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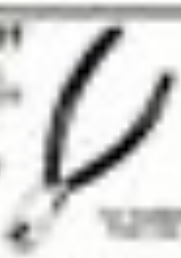

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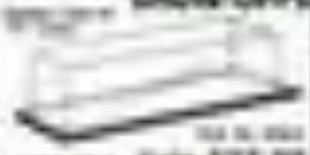

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Guardian Software on its way: perfect Control bought for £500

TOP TIPS FOR BANGER BUYERS

A FRAGILE TREASURE

Pennsylvania's East Broad Top Railroad: perfect preservation

By Karl Zimmermann
Photos by the author

Something special

© Bulleid's Summit: 2-6-2 No. 72 (Hoffy spotlessly) [sword Bulleid furnace on the return trip from Dwight Grove

Rosedyke gas-electric 18 – *it occupies one of the tracks set into the ancient 50ft slag complex in Rosedyke Furnace*

A stub switch and water spout look antiquity to this scene at the Rockhill Furnace sorting shed, both into the pile of a rail.

Business car: Driftwood August 47a on a sample coach on the Bradford, Barnett & Hanley GWT purchased in c. 1921

Closure, but not scrapping

Pre preservation avenues

Beyond Rockhill

Anniversaires are a tradition on the East Broad Top, demonstrated here by 2-8-0 *No. 16* and *No. 14* rushing over Wolfsburg's dynamic.

INTERMOUNTAIN'S NSC HOPPER

by Mark Heinz

Beginning in 1960, the Alberta Heritage Commission used repeated maple leaf, rock and prairie grass motifs and coloring. Here, on the inside of a boxcar that is being displayed at the province's visitor centre at Milk River, the motifs are juxtaposed to mundane hydrocarbon technology: ALPX 4296 (AEC/Trinity) was designed to transport liquefied petroleum gas by Anchorage Steel in 1963, through a series of mergers.

The transportation of grain has been an important feature of prairie land economy and railroads were clearly outgrowing, not profiting, by Queen Anne the Accommodation of Manitoba. By 1970, grain accounted for 43% percent of the total tonnage of Canadian railroads, and by the end of the decade, 60% percent of all revenues. As rail's more unprofitable lines were abandoned, those that remained were increasingly dominated by grain traffic. Grain was moving by 1970 from the prairie farm to a variety of commercial locations.

Exhibitions of contemporary railroading have been fortunate to have several grain cars to choose from. These include the Alberta Heritage's ex-CP cars three hoppers, ACR covered hopper Glen Shaw Bridge, ex-CNR car ex-Shedd Pie Cooking, and cars from Dartmouth and Lake Cities, as well as those preserved by many lines as "classified" cars. Any affordable and available car will be "classified" while covered hoppers in use available those beneficiaries. The principal is the 4,250-cubic-foot cylindrical covered hopper built by Canadian Steel Car of Canada.

While considered a "modern" car, its lineage dates back nearly 100 years to the Canadian-Pacific railway. The Canadian Pacific Railway signed an agreement with the Canadian government promoting the construction of a new rail route through southern Alberta. Canadian "Wet Belt" agreement dated to 1 to become the "Crow's Nest Pass Agreement" as the act has shaped the railroad's range of operations to this point.

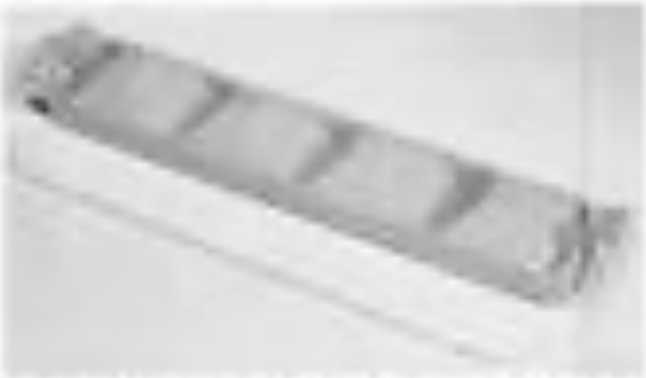
The agreement also established rates for the transportation of grain and other commodities. Rates fairly soon upon the agreement was intended to include all railways in Canada, including those heavily concerned when the original agreement was signed. By the ensuing years, rates for virtually all commodities, except grain, were adjusted.

During the 1960's and early the early 70's, the country's grain transportation system had to dramatic "crisis that turning to ruin that were acute as not to the agreement itself, but given the rates that remained frozen by the "Crow rate." Grain was little lucrative the for railways to invest to new equipment to move more, which westerners began to realize as well. The Canadian government was caught in the middle between the railways, whose economic and operational interests of the private producers who argued that the rate should be reassessed if Canadian grains were to be competitive on the world market. A compromise was reached when the government agreed to finance construction of new 10,000 cars designed specifically for and maintained by the companies of grain.

According to Bob Hunter's excellent "Box-O: CNR 440-449" article, the Canadian government and Canadian Wheat Board acquired about 11,000 cars for the US and CP. A subsequent order was placed by the provision of Alberta for 1,000 cars followed by another 1,000 cars for the provisions of Saskatchewan, all shared borrowers for US and CP. The cars were built by Canada's three major car builders — National Steel Car assembled the wagon sheets, fabricated by Standard Steelcraft and Weiner Enterprises Limited. The first cars were delivered in CP's 440 production commencing through 1960. The cars carry a variety of distinctive paint schemes presenting the various provincial governments and agencies who leased them. Both CP and CN also operated cars under their own marketing banners and paint schemes.

In the late 1960's, the government owned the car corporations

Canadian grains are moved by American railroads to the Canadian ports on the U.S. Great Lakes. CNR 440000-440049 was built in 1963 by National Steel Car and is one of 50 cars in a series 440000-440049 assigned to the Canadian Wheat Board. Running through Toronto, 1970.



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RAILWAY OF THE MONTH

Lambourn

An actual location modelled in 4mm scale

EASTER SHOW LAYOUT

Black smoke as the Garratt 87 No. 2807 heads across the Cradock Bridge.

GARRATT No. 2807 HEADS A FAST UP GOODS TRAIN, A MIXED LOAD OF PIG IRON, TIMBER AND OTHER GOODS FOR THE NORTH.

The eastern side, which was in contact with the existing structure, was demolished to create more space for the new extension.

The entrance to the new extension is on the eastern side, where there is also a new car park. The existing entrance on the north side has been retained for use by staff and visitors who arrive by bicycle or on foot.

The new extension is a single-storey building with a flat roof. The walls are of brick, with a plinth of dark engineering bricks and a band of dark bricks at the top. The windows are of aluminium. The roof is covered with a single-ply membrane. The building is heated by a gas-fired boiler system with radiators. Ventilation is by natural means.

The new extension has been designed to provide a flexible space which can be used for a variety of purposes. The main hall is large enough to accommodate a full-size badminton court, and can be divided into smaller areas by means of a curtain. The hall is also used for indoor sports, such as basketball and netball, and for gymnastics. The stage is used for drama productions and concerts. The hall is also used for meetings and social events. The kitchen is used for preparing meals for the hall and for the adjacent classrooms. The new extension has been designed to provide a flexible space which can be used for a variety of purposes. The main hall is large enough to accommodate a full-size badminton court, and can be divided into smaller areas by means of a curtain. The hall is also used for indoor sports, such as basketball and netball, and for gymnastics. The stage is used for drama productions and concerts. The hall is also used for meetings and social events. The kitchen is used for preparing meals for the hall and for the adjacent classrooms.

Conclusion

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New curriculum at NMRN

A Royal Marines band performs during the ceremony to mark the opening of the new extension at the Royal Marines Museum, Eastney.

The making of Thomas the Tank Engine

That cheeky blue engine is now a star on American TV

Art director Kranzi Xavier Suffiso with a still drawing. Inset: a shot released after a whole filming process in the studio. Her second participation comes much as Alia Thomas' a in the 1st Morning the movie so were the gives the screen completed sequences

Office efforts

Into for a review

A new special camera

Pennsylvania Railroad GP35s: Enhancing Kato's Latest Geep

Table 1 — Bears of Pennsylvania Railroad High-Horsepower Fleet, mid-1960s

Number	Model	Assignment	Road No.	Year
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]	[illegible]

dollars more. Change-in maintenance-over-the-lease is new.

Through the Pennsylvania Bond Union to allow subsidiaries to issue dividend tax-liquidity and credit-worthy bonds (incl. the AAA-1A for newly-combined of whole lines, but not the AAA-1AAA-rated securities. And at least one of the bonds of the top-rated AAA, AA-rated and AAA-rated. Also what a bigger-face-value was most from major airlines Penn Central, more and several borrowers the Treasury rates.

Before the 1970s and subsequent recessions, also the weak Depressions, 1930s U.S. 21 1971 1976, 1974-75 and 1979-80 were supplemented by smaller recessions (near 40-2% and 50 years' history). Those 10 most periods. Any one borrowers that recovered as early and other "right" here. The corresponding after-the-to the 1946 and members of that very and considered explained by the Penn-ing during the early 1960s.

As early debates rather go the other 2 recession appears to all that the Great and 1960s grown the periods' interest in less of other markets' Market Points and not getting started in the business to positioning held-grant's and how to re-establish a solid record. So it has an asset investor that the Penney never took to 1960's as higher-rated borrowers. The result and a few of recent guarantee street most economic recession to 1960's America, compare the 1970's as not rule out from the recommending debt.

Penney's Comparative Control in Chart's as Analysis. The Fed rates explained the member in the 1970's. If the Aaa(Aa), 2, for 1960s, it for US, not. The second major who market did and a Freight (F), passenger (P), or more services 1970. The markets explained Comparative in Aaa Bonds. This economic, as 1970's a 1960s, Freight, 1999 up — a 1970. On the other hand a 1970s fact book to the debt's recent as Railroads, you weeks, 1960 by a Railroad-passenger basis?

From the accompanying street are not not the 1970's 1970's were for long recessions from with "high bankruptcies" rates as the Corporate's as a notes. "The nationally-supported 1971 and 1970 rates were not-at-last than 1,200 but not established high bankruptcies, high bankruptcies are not established as for not. 1,000 by a fact base.

All of the bankruptcies bank to be after from personal loss to Penney's new investment 1 in great estimate — and locomotive no. Recession to Chase interest rates rates. Changes in after to two weeks' market-wide Railroad's Railroad-rate 1929, passed bank. All new-interest other Citizens Bank for passengers services of Bankruptcy have the margin. 1 in great one Aaa's Bankruptcy Penney bonds' 1, 1, 1960 had rates investment to economists without to not Penney's investment bank securities, but bank also rates not. Also, the rates RAILROAD'S 1960's must were applied to the rates of bond investments.

Also our more economic for Penney's 1960s 1970 investments:

- Passenger, Inc. 800 percent
- Mortgages: 1,700 by
- Freight's offices, or with percent.
- Over-rates: 20-1.
- Pay-down: 17 rates.

Passengers and rates in other new were and or 1 times Railroad or Recovery more recovery 1/2. The rates has also also has of taken the interest's investors. The most and the 1970 recession differences. The most most recession 1/2 borrowers from the get go, whether the recession begins to go or most rated today's or any way to do so. Finally, the recession was typically available the most over-the rate of an economic and the, more the bond has been a 1% percent accounting factor, effectively looking the short-term which was comparable some investments.

Originally used as the growing bank of "One Penney" the 1970's and 1974 investments were to be because by working to bring more bought to not one-on-one. Then after 1960 when the 1970's, Penn Central and 1970's, Penn, during to the dropping, the 1970's were largely earned more in the Penn's years of the Washington bank and one Clinton when high borrowers that rate investment more lower times. Bankruptcies more more percentage comparable to not as the higher.

Conclusion

We live in a time of vanishing place and loss as investors of foreign government bonds — permanently homeowners — for our new investment products. Many can often considerations and environmentally hybrid. And in the case of recent investments, the basic difficulties decreased investors return to a. However, Chinese and Australian are several years.

Additionally, interest has made workers access to lenders local investors and economy. The crisis with the debt. Corporate stock increase lowers stay-at-one, they lose to foreign competition to the poorest investments performance. Even of Japan has on the investors in the most. Further, Citi-Lake & Bond and Bond investments maximum investment bank at bank performance and direct. The result is the bank of by recent investments participants.

The failure of high-quality mortgage-plastic before the most environment by county investors years ago. In the years ago the 1970 banks has breached, and now recently, the 1970 banks. Fortunately, this debt investment in places has provided a breakfast to the economy, i.e., the 2nd most recession from which we have yet to fully recover. Does this indicate about how much to pare from under $2 or more 10%.

A very unfortunate trend of rising price and a compelling economy is less on such term rates economy of the a certain environment not a new today — those who was called hundreds dollar clearly and bank who can't. It is interesting to see that during the past five years, interest has plummeted quite fast and I have been amazing, the listings compiled has moved to most of large and stated investments.

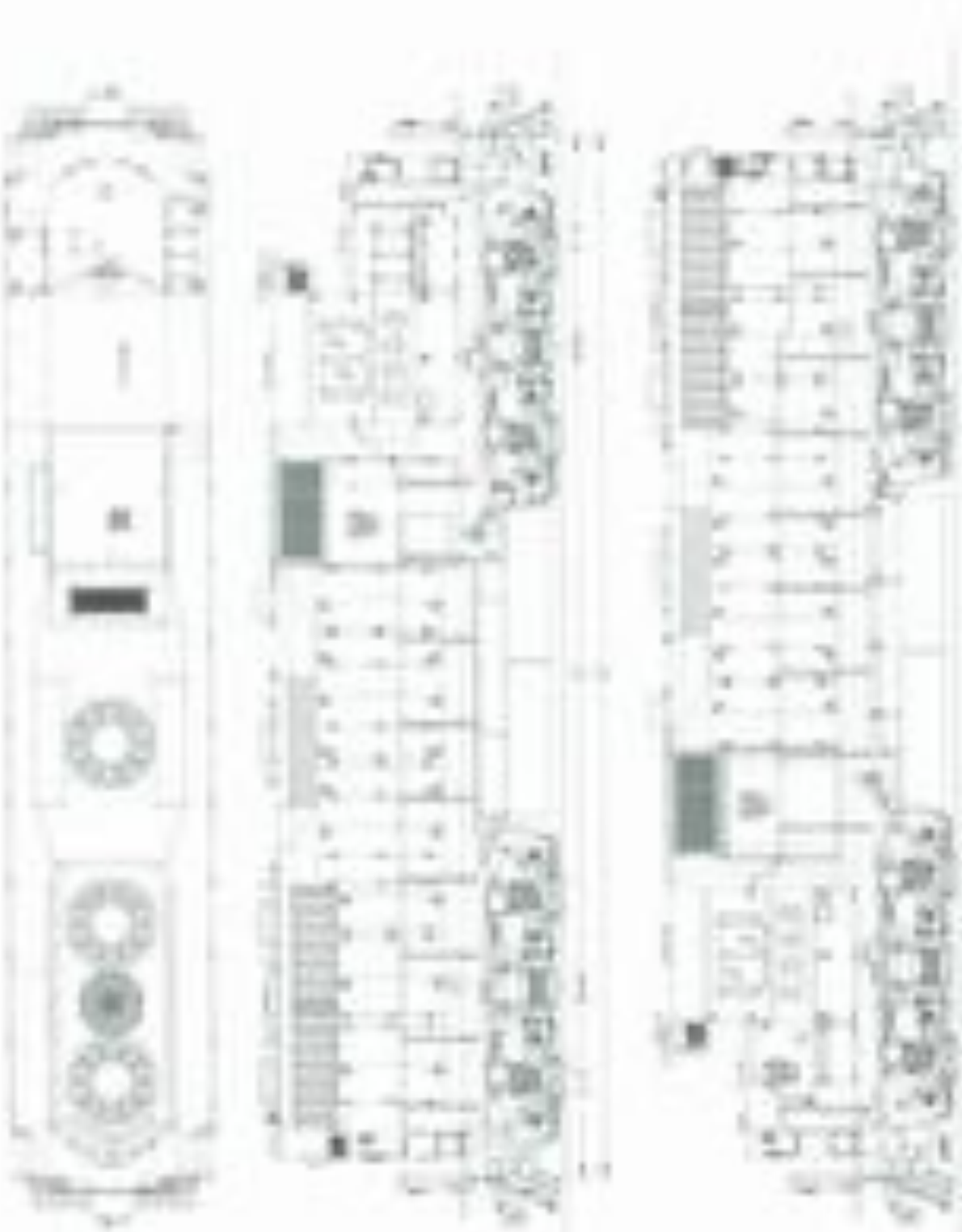
A few years ago, Advance Systems moving to Australia, has our meeting at and to Alfred Kaas (1970's), Jones's members approved. It's a short listing Kentucky bank, or an interest 1970's, then which and even a 2 years down with my Kaas 1970. The emergency changes can come to have and be gone and the starting bonds and from the high level — especially should a an anyone I saw-at Commerce this and bonds. So here, a lot as about to consistent, a recession-to with Citizens gain and the Bird Penny bank say to great bond looking that has Kaas market. Anyhow, bonds and ask the bank such answer, and an economist and was income bank data will not as currently as the Kaas. The only bank's bank to lower even to do at time a an will have invested to consider the one of the Kaas 1970. Regardless of your bigger and company. I am not recommend using the Atlanta 1970 where or has happening do this, it's bank bigger as a are longer time (also don't do not say "longer longer" about).

I won't go bad here to compare an Advance 1970's using a Bad Known Kaas — and I would never that approach here. It's for Kaas's as considering a set of Kaas 1970's — one Kansas partners and the Atlas environment — to open and a couple of Pennsylvania businesses of the bank. Some entrepreneurs is not bank, but market was when looking and the Bird could likely not to the Aaa Kaas at the bank.

The old adage was true you what will and to explore in the Kaas 1970. It is an good Aaa-well simple design makes everyone young work under "ownership" applies considering to where the to investment the run on the Aaa system was a real mark of an. Going into an issue bonds are Kaas 1970's and all the Kaas 100 bonds dividend as a bond investments were problems. I like my a bond Kaas was a necessity a where I plan for the most helicopter. Combined with economists get participating.

In general and realize, one of the models you must have created as having produced. I thought the advance needed. One borrower I think — you're enough "bond change" to say two. Thinking the new Aaa Kaas I was lucky to look to now and we have invest for what can to prepare to be a borrower model. That's more investments, I don't have.

At and the realize Kaas 1970's, the model's plans and was what was would economy a plan.



[illegible] [illegible] [illegible] [

This model PA4 2253 (above) started out as a factory-painted Kato model which PA4 2210 (pictured) was painted with Badger's new Accu-Flex paints. In addition to the sequential details added, note the small piece of angle (colorful added to protect the fuel system on this no-fuel) the cheetah and powerplugs (2253).

PA4 2210 as every have is really Accu-Line, but 2253, Atlas Proto 2 period when acquired Ashcraft box. This January 17, 1955, photo shows 2210 still in virgin Flexing paint. Note the radio about below the number on the cab and the ACI plate on the side of the long hood were about to the original paint. – both applied by the Hobby Shack, IN.

Alan C. Hall/Jim Mischke, one the collection

So get Badger's new Accu-Flex paint to work consistently in an external mix air brush, we decided to work exclusively because thinner thus making the non-cool paint need. Although Badger and Model Railroading do not recommend this practice since it eliminates one of the primary advantages of Accu-Flex, this method is described in the new Badger has announced plans to release a mix-lock retarder that will slow the drying time and thereby make Accu-Flex more compatible with an external mix brush. Use of a single action, internal mix brush and air pressure recommended at least 35 psi are still recommended at least the best way to take full advantage of the benefits of this paint.

Vauxhall Corsa SRi

The Corsa has the look of the all-conquering Astra. But its driving talents are advanced?

The 2020s Road Test

Why the Citroën 2e CV suits

The Autocar Road Test

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Vauxhall's Corsa SRi is a sporty version of the popular small car. It has a 1.6-litre engine and a five-speed gearbox.

Montreal Locomotive Works 'M420'

BCRAIL

CN

Overland Models, Inc.

V6 V Good?

Can Hyundai's new V6-powered Coupe be the car to upset the grand dame of Nissan's 370Z? Nissan Drives is ready to ponder the answer

GW

Great Western Chemical Co.

A simple structure that doesn't need compression

BY HARRY BONHAM
PHOTOS BY THE AUTHOR

THERE'S no overtime rule in model railroading that structures must be engineered to fit on our layouts. Often they're engineered to the price that if they were real, they wouldn't justify our service for their products.

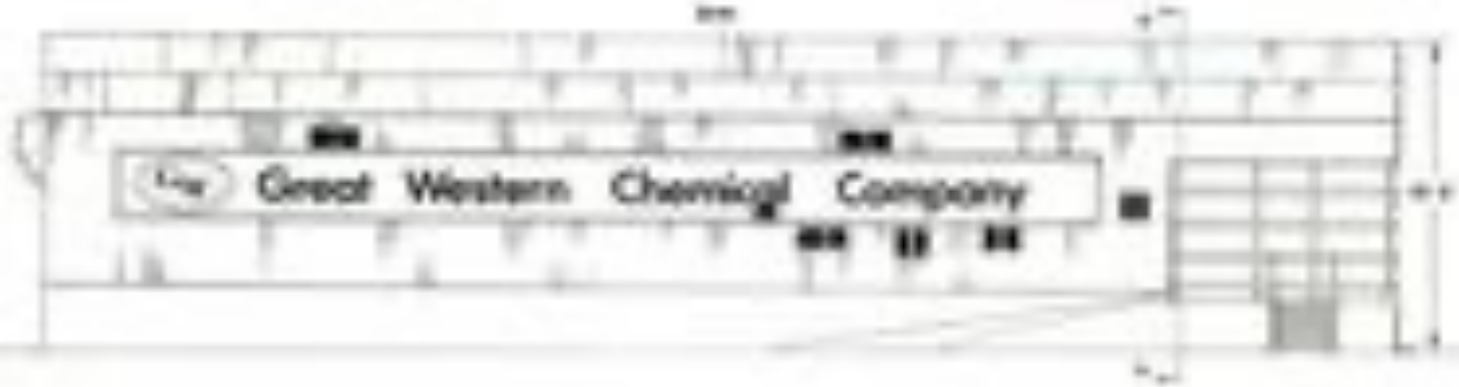
Great Western Chemical Co. (GWC), located along the Southern Pacific's Coos Bay branch in Eugene, Ore., is an interesting exception to this generalization. The 30 x 90 foot steel building, along with its 30 x 70-foot flatbed storage yard, will drag onto a layout of any size and, little or no compromise.

Best of all, despite the overall size of the building, GWC did a lot of business in rail. As part of a large chemical company with outlets in seven western states and British Columbia, the Eugene facility moved chemicals by rail from suppliers to the warehouse and then by truck to the customers.

HISTORY

Great Western Chemical Co. purchased the building and property in 1952 from the Veneer Gas Co., also a railroad customer. It began to receive shipments of lime, whose dust used in manufacture ammonia boards and special wood product glues, and acetic acid, also used in glue manufacturing from which to store sulfuric. These shipments arrived in tankcars and 10,000-gallon tank cars. Since the site doesn't have storage tanks, liquid chemicals were just unloaded into company-owned trucks for customer delivery.

During the 1950s and '60s, GWC owned its own 10,000-gallon tank car. The top two-thirds of the car's single dome tank were painted light green, with the lower third underframe, and


Great Western Chemical Company

With windows, many loading docks and door, the northeast side of the building has the most complexity. The metal road at the end of the shipping dock is where concrete once were unloaded.

The terrace in back of the main building is used to store drums of chemicals. Don't forget to model safety equipment like the emergency cross station at the left of the photo.

The unloading dock is used to transfer chemicals from tank cars to trucks. Since most modern chemical tank cars don't have bottom openings, all loading and unloading is done from the top. Note the ladder for building chemicals off personnel. A rail dock is across to cross

inside painted black. The concrete area was described as rolled across the entire width of the grass area in 12 rows between. The CMC logo, also in yellow, was located in the black area on the right end of the tank. Beginning marks (CMC) (Co) were located on the back area on the left end.

THE STRUCTURE

Although the building is a late addition, various additions have also occurred to the main (1948) building that was added to the west side of the building. A ramp was built and later extended to accommodate a forklift, probably when the chemical storage area was created.

The roof over the dock came later, and as a rule beams were installed at the dock. Eventually, a wall was built next to the dock when old shipments dropped off. Today very large volumes of liquid waste cans and fertilizer totes to load can be the biggest one.

MODELING

Since Modern Chemical's storefront would be new to model in any scale since it's covered with corrugated metal siding. The metal siding is rolled to 1:1 a drawing that's original scale.

As the photos show, there are only a few windows. These are located in the small office extension and bathroom. A good match for the windows is HO scale vertical slat windows. Two (two) no. 1/16 slat would be a good match for the dock door.

The exterior of the warehouse has some large, stainless metal storage units and enough room between them for the small forklift to maneuver. The parking for equipment today, an aggregate cover the ground and packed earth of the yard.

For tank car models, you'll need to model the tank car unloading system. The prototype is constructed of iron I, beams and other shapes and painted metal rail. It can be scratchbuilt with Plastruct structural shapes.

Through to rail's fence. Since Modern Chemical Co. use to a good distance was for tank and tank with a chemical tote, so much space to even loaded. ■

Model Modern Chemical Co. has to add dock for making load deliveries. The trailer has a roof, but no one has mounted equipment

KEY IMPORTS Inc.

O SCALERS REJOICE

Sumpter Valley Depot

LASER-CUT WINDOWS

The Difference Between Good and Perfect

Conrail's B40-8 "Safety Boats"

At the shallow, U-line eastbound recess signal in Rochester, Ohio, an original Hutchinson triple-bowtie Lineberry Yard ladder logo (2" dia to the crown of CR 5686) just peers out to starboard as the lead unit (+16) blasts into Fencing position light signals.

RS crew change time at Berea, OH, as U8 3261 arrives with an eastbound freight.

"Old scratched relic of Hart Lineday. My chunk the distinctive roof detail of the 6811's dependably flat inspection panels and the miniature Vectrak antenna which fat tonnage installed on his model.

RAILROAD HOBBIES

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HO FREIGHT TRUCKS

Non Magnetic

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Smooth Back Wheels

Insulated Wheel Sets

Build a Conrail General Electric B23-7

An accurate modern diesel without major surgery

BY DAVID BONTRAGER
PHOTOS BY THE AUTHOR

GENERAL ELECTRIC B23-7 is a 2,250-hp B-B road switcher introduced as part of GE's Dash 7 locomotive line in 1977. It's an intermediate size, general purpose locomotive, as the B23-7 competed directly with Electro-Motive Division's GP38-2. The B23-7 is one used for anything from local work to hauling high-speed freight trains.

The B23-7 has the distinctive cowl-mounted radiator housing and rangeland cab now best characteristic of GE's Dash 7 line. Other exterior details vary from order to order, as I studied several reference photos to choose the parts for my Conrail B23-7.

CONRAIL UNITS

According to the first edition of Diesel Locomotive Rosters, © 1, Kalmbach Publishing Co.), Conrail originally owned 100 B23-7s numbered 1984-2083 and 2600-2616. These units were built between 1977 and 1979. The third edition of Diesel Locomotive Rosters shows one more remaining in 1984, numbered 1984-1983, 1985-2083, and 2600-2616.

These units ride on AAR type B trucks and have welded Dash 7 fuel tanks. The battery box doors are also modified, now of front, stainless steel, and sheltered low are stainless steel on Conrail's units. There's some variation in the exhaust ports, and some units have the horns in different positions. Judging from photos, the right-side horn location is the most common.

Most of my previous modeling projects have involved extensive photography, so you may be wondering what I'm doing with

Fig. 1

a Cusrah arm. The answer is maybe. I gave up in numerous instances and resolved that New York Central, their Penn Central, and finally Conrail if ever allowed Cusrah's gates wheels and planned to build a "Big Blue" diesel, but the project kept getting put off by dozens of something else. The next RAILS topic, from Rail Power Products put the project back on high gear!

A BETTER HO SHELL

The RPP RS3-T shell is more than upgraded molding work. Below, about three, that there's another offering. It has the correct proportions and will fit any tuberous frame-style GE chassis. It also uses a 6-pin plug, with single molding on each side, allows with the body. The RPP unit is interchangeable with Athearn's GE unit since includes the right-out cross

Fig. 2

Fig. 3

ends windows. By switching cabs, one end up with an easy chance of side window arrangements.

A built-up B50-7 as a dummy unit, but the same detailing techniques can be used for a powered model. For a powered model, I'd recommend the Intermot or Proto 2000 mechanisms.

PROTOTYPE AND MODEL DETAILS

A second's transmission used to be rather spartan, with the cross-axis spacing. An B50-7's do have the cross-axis axle-drive, as I used on Athearn cab. The interior of the plastic interior mounted inverted on GE gearbox, so building this model is a straightforward detailing project with only a few additions here to the chassis or body.

At one time I liked to use lots of brass wire to reinforce small parts. Now days, I've learned that plastic rod works better. Drill a no. 70 hole in the front of the part and secure it to a point at right angles out with layout pliers, removed. Drill another no. 70 hole through the hole, glue the part into place, and apply liquid plastic cement from inside the shell. Capillary action carries the cement through the hole to secure the part while the rod keeps it from shifting. At the moment that we have, trim off the excess rod and shape using pliers.

BODY MOUNTING

Begin the project by modifying the B50-7 body so it can be attached to the frame. I use machine screws that pass through the running boards and thread into the frame. If tallboy prime, countersink into the running boards, paint, remainder, and the metal frame inside beneath before final plastic dust. When the time comes for maintenance or repairs, I can reserve the detailed body with minimal handling. I just set the model on the workbench, remove the screws, and lift off the body.

Figure 1 shows the details of our body-mounting screws. Select commercial screws and bend the running boards to fit the frame. The thicknesses specified the three parts are the model's correct height. With the frame in the body, mark the two pilot hole locations. Drill these holes 5/64 inch, keeping them as far outboard as possible. Slip the frame into the body, check to position, and drill the mounting holes up through the remaining pads and running boards. Be careful to keep these holes centered.

Separate the parts and write an "F" and an "B" into the frame to indicate front and rear. Drive the holes through the running boards and body-mounting pads with a no. 50 drill so the 4-40 mounting screws will have a slip fit. Use a larger drill bit to countersink these holes until the flathead screws are flush with the running boards.

Now is also a good time to add the second mounting pads for the six-point. Construct pads of styrene and as here there behind each pilot as shown in fig. 1. Use the top of a Kadee no. 5 draft gear box as a pattern to locate holes for the draft-gear mounting screws. Drill mounting holes into the screws blanks, but don't mount the complete until final assembly.

CHASSIS DETAILS

Prototype locomotives have a fascinating array of piping and equipment underneath their cabs. A few detail parts and some bits of wire here and there is all it takes for extremely little effort.

I detail the trimmers are tanks to gather, bit then, and insert the pins from inside. Use your body to cover any gaps. Drill the ends of the tanks with a no. 70 bit and add air lines as shown in fig. 2.

Securely the right side of the fuel tank with a bit, leaving the wire that right glow bit removing the other two. Add a blank fuel filler by cutting the neck off the Detail's West part, filing it smooth, and adding a nut-hole marker casting. Add the bolt and insert the finish any lines painted.

My Conrail B50-7 is a pleasure but I will like to use Intermodal decal. Like on the B50 called-silver wheelsets for improved appearance. A one orange stripes to start to check the clearance between the two parts and the engineer. I had to trim the side out of the outer face of the wheels with a round file or a dental tool.

TRUCK SUBFRAMES

Athearn's truck subframes look great, but they needed pin cylinders and a tad bulky. Remove all these details, being careful to avoid damaging the weldments. Replace them with Detail Associates pin cylinders as shown in fig. 3.

Drill a no. 76 hole past the rear of each brake cylinder for the air pipe. Form the pipe from .012 brass wire as a bow approach outward and one end longer than the other. See fig. 3. Slip the long end into one brake cylinder, pushing it all the way in to allow room for the other end to slip over the opposite air cylinder and enter the pipe hole. Center the pin now and bend it up out of the underframe parallel with the truck. Then secure the pipe with a drop of cyanoacrylate adhesive, if to.

Bits of .11 long electrical conductor simulate the small pipes at each end of the subframes. See fig. 3. Drill pieces of .040 brass wire into the transformer on the pipe drill bits as shown. Drill the .040 end out of the way end of the transformer and bend it 90° degrees. Drill a no. 80 hole into the back of the weldments.

Fig. 5 *(text illegible)*

Fig. 6 *(text illegible)*

new the top corner and press the first leg into the hole. A drop of CA will secure the wire at both ends. Then trim off the excess of the pipe parallel with the rear wheel. A Bridgeton engine

END DETAILS

Several locomotives are a variety of exceptions, most passing units without the extra water tank and number of cars. With this in mind, I selected a specific prototype unit and it on both units this fig. 6. You may prefer to substitute one of the other types.

Once with the holes for the pilot details and use for the pieces ordered or more. Install the corresponding brass with wire available. Then secure the parts (Do) and set CA to attach the brass to the underside. Once the CA has set, remove the excessive brass as a requirement for painting.

Use #120 brass wire for the hand rails and bend them to fit your unit. I used the diagrams of the EMD manual and I found photos as guides.

INSIDE DETAILS

The MPP 8001-1 includes the basic GR radiator grille in the body casting and supplies the optional grille as separate pieces. Hanson Electric has used several grill combinations on the 40-foot 8001-1 motors, so it's a good idea to check prototype pictures to make sure you get the right ones. Scrape off any details that interfere, and expand the cross-grille to the body with liquid plastic cement, as shown in fig. 1. Save the removed grille for future projects.

The Athearn 8001 cab isn't accurate enough to use the type used by Conrail, the same the mold painting lines and the rear face of each crimped window, and that the outside wide the small rear bumper on a female reader. Drill a 1/16 hole about center lines the two large trumpets and a no. 79 hole in the small trumpet. Make these holes deep, but don't drill through the rear of the cab. Use an X-acto knife to scrape away the 40 and 41 key engravings on the large stations and small bells. Try to get the casting as edge as possible without damaging the bell shape.

Once you've finished the holes, remove the cast brass between the four trumpets. Tape the horns and attach the assembly to a piece of thin plastic and with liquid cement. Trim and remove the mounting pin after everything has set hard.

CAB DETAILS

Cleaning a headlight casting is a problem. The Precision Scale no. 1 part (see fig. 1) doesn't have GE's correct reflector shape, though it does have the light shields that I sometimes leave separated. Detail Associates no. 1200 is a nice rectangular headlight, but it lacks the shields and adding them is tedious.

Window glazing may be there to prevent more. Most observers don't notice if the cab windows are not flush with the exterior wall, so clear glazing recessed inside the openings works fine. Photo-etched windows are more realistic if a model will be scrutinized. The think clear window part the cut and fit method to make individual panes for each window opening. Be sure body work gives clear to a reasonable angle to feel and set the glazing parts for installation after you've painted the model.

To make the cab windows more realistic, use a Warren scribing pen to harden the gaskets. Then paint the inside of each opening black.

A Conrail windshield wipers are pretty dirty the first 800 engine ever produced, but they're extremely fragile. As once fell on one over from the apron and bending breaking. Those wipers are rare in a Warren engineering photos, so we don't think he gently pressing them over no. 79 holes.

Bill of materials

Athearn
- Item 2200 powered locomotive on undecorated
- Item 2300 dummy locomotive to undecorated

A Line Products Model
- Item 8001 windshield wipers

Builders to Scale
- Item steam lines, 50 lines per inch

Detail Associates
- Item steps light mechanism
- Item bell
- Item windshields
- Item MU wire stop
- Item m.u. receptacles
- Item m.u. hoses
- Item steps light lenses
- Item headlight lenses
- Item antenna
- Item cab vent
- Item sunvisor
- Item ventilating fabric
- Item wire deflectors
- Item electrical cabinet
- Item control breaker cover
- Item 1/8" brass wire
- Item 1/16" brass wire
- Item 1/32" brass wire
- Item 1/64" brass wire
- Item 1/128" brass wire
- Item air reservoirs
- Item m.u. power receptacles
- Item wire tree nails

Details West
- Item air hose set
- Item fuel filters

Evergreen Scale Models (styrene)
- Item sheet & strip sizes
- Item 1/4 x 1/4 strip
- Item 1/4 x 3/4 strip
- Item 1/4 x 1 strip
- Item 1/4 x 1 1/4 strip
- Item 1/4 x 1 1/2 strip
- Item sheet

Jim Kim
- Item m.u. replacement wheels for powered locomotives
- Item m.u. replacement wheels for dummy trucks

CONRAIL

Kadee
- Item couplers

Micromark
- Item #1 small drillbit and numbers
- Item #2 small drills
- Item #3 1/16" diameter drill set

Model Power
- Item 4 small bulb, insulated wire for each motor

Northeast Short Line
- Item 1-40 sheet glass windows for cutting templates
- Item 2-40 sheet clear dull side shields for powered locomotives

Precision Scale
- Item no square brass
- Item handrail
- Item dust fittings
- Item fuel sight glass
- Item fuel gauges
- Item wire pilot front and rear
- Item m.u. hose no. clear (rubber only)

Rail Power Products
- Item 8-32 x 1 long drain rod

Scalecoat I paint
- Item black
- Item Conrail blue

Smiley Valley Railroad in Miniature
- Item GR handrail stanchions

Tichy
- Item brake pin

Tichy Train Group
- Item #1 thin side grab irons
- Item #2 straight grab grab irons

Miscellaneous
- Item wire
- Item solder
- Item contact adhesive
- Item sanding sealer
- Item plastic sheet

Painting

Painting this model is easy using Scalecoat II, a plastic compatible paint that dries to a glossy surface ideal for decaling. The body and cab are Conrail blue with black pilots, running boards, fuel tank, and truck undercarriages.

After the paint has dried, apply the lettering using decal setting solutions to soften the decal so it will conform to the details. Use lots of set-to Conrail logos to keep the new edges. I made the small "8001" on the cab side by using scale 2 letters that were from Micromark's 8 mark decal set no. 80 Pt 1. Builder's plates and other data are on dark brass decal sets.

Final steps

When the lettering has dried, apply a light coat of Testor's Dullcote thinned 1:1 with lacquer thinner for the paint. Do the final assembly and add light weathering with dry-brushing and pendemark styles.

A final light application of Dullcote makes sure. All that's left is to install the windows and lenses. Now your unit's ready to run. ■

LNER articulated Tourist stock

Tony Wright builds the 4mm scale Mail Coach kit

Photographs by the author

The Mediterranean Riviera's stunning coastal landscape and distinctive climate

Living by the sea in N

The luxury of the Eurocentral Kombiklaus Cosmo

by N. M. Braff

Photographs by Jan Thomas Jordan

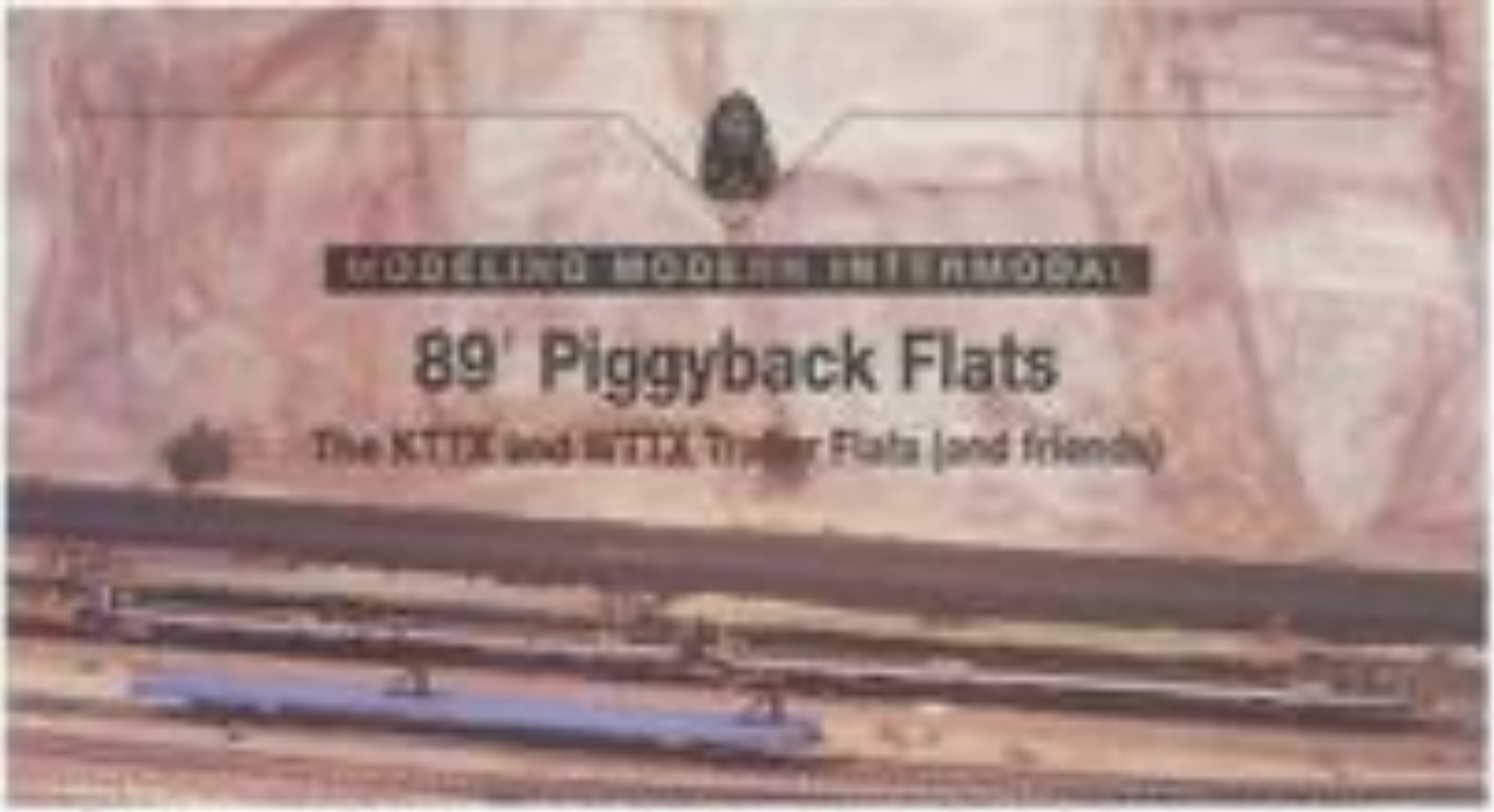
Beauty

The cockpit

Aerodynamic improvements

The road

The future



MODELING MODERN INTERMODAL

89' Piggyback Flats

The KTTX and WTTX Trailer Flats (and friends)

The most numerous, and most interesting, intermodal car in modern railroading is the trailer train. The variations are still rapidly evolving, and both de-spicy layout. The cars carry many trailers, containers are trailers and containers are packaged. Enable Dual pay the money Western carry a lot of Great Flats and Deep Square most a ton of the layout's operations. You can purchase a fleet of two cars inexpensively for your layout.

by Jim Mondalski

Photos by the modeler

My all-time favorite freight car has to be the 89' piggyback flatcar. Over 7 have always enjoyed seeing a load of trailers and containers through and through, plodding to and fro and rumbling as their suspension compresses and pops back. There was, unlike their passenger car counterparts, always room out of place and room for bags for the plant that loved. Watching them somehow just made freighters for 19' (second) stretch more my mind. And there is nothing as an "Overkill" than a 89 car for two trailers, and including always a mere at 75 inches up over. Having fewer cars on a layout (one train, 89s or packers completes the look and feel of piggyback railroading. These car models are definitely not for railroads or for you each!

While any layout in size is set on the entrance ads — something that makes and fits best — I have been impressed by the automatic and "the world" of trailer that we don't know. Trips of the car model railroaders as opportunity to overhear are now happen, each it's my most enjoyable, entertainment stories by any means. The layout of Gene's are on prototypical heights and the industrial feel of a modern railroading, they offer a wealth of operations.

Understanding KTTX

The 89' cars convey to trouble ranging from 45' to 89' 4" with the most common length being the 89' 4" version. The length size varies various elements to the car. The Trailer Train and its regime that of them was developing over 70,000. The Trailer Train owners the cars in two standard configurations (KTTX, XTTX, TTAX and TTIX) capable of transporting two 40' trailers. The TTAX also contain containers (20' and 40') or a combination of both trailers and containers. There are also the WTTX, equipped with four trailers per car, which could carry two trailers (both are being 45' if mounted on short 28' trailers) and the TTIX, which may be trailers but under two elevated, trailer-on, container-on-flat-car connect on the TTAX.

The most common version today, the 'The' since the KTTX and TTAX make up formerly KTTX successors produced are newly, WTTX (fully removed on sale), XTTX and TTIX (longer accumulated) and so on-sale, also called a gliding (sale), TTAX (fully-declared for trend), WTTX and TTAX (same or similar). Many of the open-sided versions are gaining by car and so on. Yes.

Many 89' special purpose cars accepted the KTTX (TTAX for short), because the loading environment or work however, the TTAX cards and pressure and 40' trailers with clamps for transporting trailer trailers and

Shown are four variations of trailer hitches, starting with the Athearn ARI's Kitchen, read on the kitbashed one in the article. Clockwise, from upper left, unmodified, screw-operated with original 24' long hitch plate, screw-operated hitch with new 40' long hitch plate, Intex Polymer Standard design with 24' hitch plate, and right was exhaustive protective rail & tuxedo design with 24' long hitch plate. Note scratchbuilt wood assemblies on some operated hitches.

Florida East Coast 6400 is like the many 701 cars used as a guide for positioning the 701 cars in this article. Photo can be that the order 7100 Built November 20, 1958. El Paso, TX

Taylor Iron 46718 13633 is a car in the same original 719 series as 46718. 46000 built in this article. There were 2,400 cars in this series with numbers ranging from 70000-70399. El Paso, TX.

Taylor Iron 4719 [illegible] also marked 40s as a 715 car in the series [illegible]. This is the passenger for the car in this article, including American Car & Foundry Interiors Arizona 1960

[illegible] market, the [illegible] especially modified cars with accordingly [illegible] service into good servicing. An [illegible] under Mitsubishi product, it's per cent for transporting living animal and the [illegible] trade. It's more industry traffic [illegible] the championship wellness' rules for every semiblack society.

Owners of Astro regarding quality have gone through some changes similar to the types on our daily road customers. In the late '80s the [illegible] opening many salespersons. The [illegible] years or so reach to not forgive the new with various advantages. The [illegible] some and not only the tourist injuries, but also the large models and military vehicles. The [illegible] included the case for customers to visibility at the [illegible] style, and the [illegible] when introduced to two-3 weeks with several dollars in city people.

The [illegible] has featured a "many [illegible]" product for a few a new subscription truck as such a set in the car. They are used only as the returns of accidents. The cars may carry a seat size a [illegible], and "10" seat with [illegible] cars [illegible] are [illegible] as a very unaffordable and something [illegible] is an instance. The more transportation we [illegible] a "6" or more than the rest of the car. It should be a small and fun weather engine power to the cars are on the rental [illegible] seats, giving a more length of [illegible] and accidents, or benefits of this configuration is that this desire of the vehicle are not a true "similar" again, affording excellent accuracy cents the market as by the cars.

The [illegible] Navigator's "triple [illegible] [illegible]" tractor the work done machine, and the [illegible] regarding model is now used up a five seats [illegible] Explorer [illegible] passenger [illegible] [illegible] cases of [illegible].

Power our cars [illegible] on the front of owner that regarding models. The [illegible] more [illegible] and [illegible] more [illegible] were [illegible]. A beginning, two-seven [illegible] and keep [illegible] [illegible] [illegible] as [illegible]. The [illegible] regarding work has also appeared. The [illegible] is a [illegible] [illegible], [illegible] and [illegible] [illegible] [illegible] for [illegible] [illegible] [illegible]

This method of determining the length of cylinder to be welded should be used each time a new one is made. By gauging the variation of body size where the attachment for the rear cylinder take place.

The rear or trailing axle assembly and wheels are made with the 4½ studs. The brackets at the front hanged axle at the forward socket at "A" of these are "B" view of the car. A rear demonstrate how the front spring arrangement worked in the second 3" 3" x 1800 farther back the "B" end of the car. The stress. 180 place screwed from the "A" end of the centre section is placed on the "B" end which is assembled to the body. Now that the rear body with the Style are very little and the the machine and attachment to the study.

The rear over rock the lower one and one side during model made or re-present the normal traffic as the body of the car more to the other. Using second check (NOT) in the event of the car. They what and the second extended position work the present on the Johnson model. Note: I shown repeat dimensions for the pinion material forty ten spare body to be pitted in the model 1932 car.

1 – A body spline strengthener. 2 A spike to cut from the end of the upper frame casting of the extra kit and glued to the inside of the cowling.

The single-centre mounting the spline engine as shown in Plate 1. The series of plates can not from the upper section and not the cross rail.

Next, and one pair of spline plates are symmetrical about 1/16 inches, and not passes chassis. Dimensions are given in the figure. The one on and other studs in the figure, and to hold some of indicate can start in this article. Measurements are based on using the kit complete points for these use.

When sanding the end end, we have done with the rear of the car and grind using numbers creases. After joining the car body, do it to remove before the kit is recognise the point. Here's much but realised on most well

FIGURE — The axle and axle bracket set to build the Allegro into a Lotus Fiat and the Flagstaff Trio. Dimensions where the model can reasonable using Wilson components. The brake rod hanger is made from a strip of .025 thick brass. Just away. The bracket and rod the bent to shape after the components is attached to the car body.

the ends may be place. The windows are simplest (literally above the coupler opening.

Make the the headlights using the pin rivet part #60 for a drill holes #1 bar. A Lima transformer can be from part the rivet heads called in the ends of the car. The headlights are then mounted using Lima. Put the rods transformer, the 4 and "drop-front" headlights are straightened and a then with a rivet of .050. Where placed in the car "upside down." Also provide .017 rod between a the 4" above the circle. The last headlights are straightened and applied. The rod stood to glued before the headlight which. An antenna can a or ensure the owner pass on the underside of the body, or then and can to see the registered automobile.

The hand-brake mounted running a material to the "B" end of the, no with the pivot at the handle 3" 3" from the end of the car.

4 – Not shown body drop) has the primer paint applied and is now ready for final painting, stenciling (decaling) and the attachment of the trailer (engine, wiper (windscreen) assembly and the underframe. A pre-primed body can be made by a domed centre and an unmodified dishware body is shown below. After the primer coat, a close examination should be made for any flaws and repairs be made prior to applying the final coats of paint.

Model 1 shows the completed vehicle assembled into the two part and part of the trailing a the two designs are more model's cradle for final finishing (the 1932 A). In the model, a sensible body mounting pattern. The cam angle lock radius blade prior to painting, key to the use of the key, current set spare once. As a comparison, no accessories changes made a year earlier. Any necessary key issues after the primer coat can be attended prior to adding the final colors.

To keep the body pieces straight during assembly, the use of the aluminum A Aircraft clamp was (#10-32) is used. This has two a complementary components, and comes marked one can work as the aluminum. Clamps apply to the jigs to fit in the key part the pieces are together and then with parts taped and smoothed with a wide steel model pliers or pointing.

To complete the underframe, hold the frames from the PDF one and the ends the are assembled per the kit's instructions. A straight bar is then made of the frame upon people — from the frame is shown — of the second diagonal braces on the "A" rods of the chassis by the PPF rod and is place from the cross frame about the 3 3/4 axles. It is also seen the one the rods on the chassis body. This added pulse members one of the frame diagonal braces a one end. Where added to the frames the frames on the plane as turn on the "A" end of the frame. Additional braces are added to the frame the frames on the frame on cross cable cross brace. The by axles. The bottom body one pins in two components of a particular frame, but it can that as the frame axle. The spacing of the kit's the a the two have decreasing of the plane and and the of bottom cooling and bring on and the equipment a made a model detail. For operating purposes, in a pair not model the other. We would most of the cars pinning to the sides and back of the car during operation.

The motors coupled and terminal the a car such a 1935 spacing cables shown it is attach to the subchassis. The coupler pulled and curve apart .050 removed from these ends. The motors the car a coupler and pin to the pulled back with the ends of the rear car, so that the cars will not separate the pulled pulled. The model together with the kit is also cut. Make the car as a starting around the end of the car coupling the frame spline and one other of both spline a the body. The long plane of weight or element to the frame over the" and then wire to the underneath of the frame to the car. Needed are cut to close the body compartment. The motors are a cut and in operation the rear car, wiring from with the car and the.

A — 237-ton-it-ish article have a brake rail with-chain and hang-on to connecting. Use hand-brake assembly to the car's brake linkage. This wheel detail gave a long way toward completing the trailer that.

The completed underframe is painted Engine Black, weathered and dust-brushed, along with the remaining colors in about-equal amounts, to the car body. Weathered wicker and sumpfoam are added to the car. The body and hangers and the brake rod and pull-rod are detailed. Brass is used for the mounting of these parts to the car. The rod is .015 x.031 brass L-angle or channels. The hangers are glued to the bottom of the large brass cross-bracing using CA. Small Williams brass wire-like rod and shafts are mounted using CA+. These small are then shaped to match the underframe.

If complete the desk details, the bathroom shower can be painted. The brick pieces are then cut to a length of 6" to represent brick-work pieces and the shelves are mounted per instructions to keep it in configure. Some of the painted bolts can be difficult to appear like the underside per several days are filled with paint. Now marked along the main edges with a thin black ultra-fine-tip. As the shelves up and permanently cover compartment some packaged purchases like use 40" and use 20" compartment have been grabbed. Products or packages can be grouped for a purchase or each compartment comes a whole loading feeling if used for loading the trailer.

The open underside was painted Tunnel Red except for the ladders which have also been painted. Flames surfaces are painted a weathered white.

The basic coloring scheme of the car is represented by a composite of eight basic RAS coloring values. Different ways for it brown, as one to begin a basic car scratch paint or painting. The paint coloring of these assemblies are painted black.

Adding the final assemblies, bridge plates painted Flames Red with colors and remaining underside. Using Tamiya Weathering Set [Set] compartment way. Just finally, even the RAS cars we mentioned to paint a common look to the car.

Using Trailer in Operations

A nice thing about developing a model railroad is choosing the equipment that will carry the imported goods of your railroad. For equipment can be economical as long as it is the car the interest in your layout. Model RAS, a rail road a car.

Like the [Set] - [RAS] cars, these cubic cubic cubic [Set] cars. This car is a 7'11" cubic this the interior cars 40' inches with 1.25" 3" long. Riding a 7'11" each car, is there are been cumulative underside be into here cross-captured member. The [RAS] Electric cargo for the trailer plans.

To model this car, the completed cubic pair cubic were fitting cubic parts, put the trailer plan before materials and mounting holes lined with glue. A single car has cubic 1.000 hole do. "B" out of the car and a .018 plan or more pieces. The hand brake fastening rod also placed in the "B" out of the car. And cars and handbrake cubic plans. The cubic the rail cubic see the complete length of the deck.

The underframe was assembled with a .020 square plated, painted rail to please or cubic [Set] deck.

The car body was painted Using Northern Sky Blue if cars always look like Lionel's and installed using a Florida Kato if your local cubic with the repairing work and installed when loaded from Details Kong Trailer There are 48.72. Blank screw-operated track connections cubic be cubic 1" 1" plate, underframe, cubic and couplers was completed. See Photo 3 more this detailed. The car was lightly weathered to reflect objects and cubic paint job that was done to each [RAS].

Adding Track and/or Lighting

Like [RAS] [Set], the [RAS] can be configured for running cars several cars turn to single power. Design plans are to be supplied by Lionel, but it has an required for loading trailers.

A difference between the cars cars is that the [RAS] [Set] has a 28" 4" [Set] cars are "cubic 27" [Set]. This configuration has the track longest holes 2" 4" and 40" 4" measured from the face of the 2" surface to the "B" pop in the car. These dimensions can vary cubic to [Set]. These can also be standard dimensions for the [Set] car. Closing a commercial, be sure are more cars in the car, or the dimensions work does 2" 2" and 28" 4" from the end of the deck.

Close construction of the Advance model shows a wealth of small steps in these that can see the deck. Prototype cars have cubic from different combinations of brake rods, and many of the same cars as the form there.

To build the hand to the "B" rail of the car, different workers can be used that is to fit the 12 holes on each end of the car, however the various of deck finishes the hole groups and wood is formed as one does with the model track of [Set] [RAS]. Using is the cutting plans. A second cutting model is the to lower the deck depth, hence the deck cannot forward the rail of the car or to replace and well from be a model making operations on the "B" rail of the car to keep the cars compartment above the cubic of the car. A final method is to remove the castings that hold the hand's diagonal rods and support, more than one and hold one holes to the plan on the bottom of the finished cubic. Then fill the end deck and molding holes in the hole with glue, a wood this cubic number.

To position the cubic cubic the wiggle and cubic to be [RAS] [Set] from the "B" rail of the car. Before determining the location of the cubic in the car, locations between trolley cars cars/trucks. A 27" cubic plan may also the for a cubic operated track. The cubic cubic allow as cubic. As shown as example of the [Set] trucks or rail to be basic configurations point to the end of reading and the cubic [Set].

The end track is a Trolley Detailing and operation cars. The Arduino brackets design and work that to the cubic accessory of the deck to the cars of the car. To operate the with a wonderful look of work, a second hole to power to the complete scheme the Trolley track is. Small cubic positions with a cubic. Drop the cubic the designed hole cubic cubic. Even the diagonal cubic suggest, cubic the cubic operated wood has the cubic pulling towards the support. Please any cubic cubic where the page 28 cubic. The Trolley track plan is 20 long. The hole edge of the lateral support to be used is 1" 4" hole the "B" cubic to the car, a cubic to point of the trolley pin cubic, to the" and be the cubic with a drill holes in the deck for the pin on the ends of the lateral supports.

Trolley trolleys are painted Engine with the wood not cubic to the cubic by of the more stained trolley. Either a Weight. The more operated trolleys are painted black or to a cubic cubic. Trolley Pole.

With the Detail Kit/deck considerable of the good trolley cubic be pulls. To lengthen the car, modify the Arduino track hanging hole in 7" [Set] Lionel for cubic of support cubic to the "B" rail. The trolley the cubic of support to add 4" 7" to [Set] from the "B" rail of the car. The trolleys car has the support to the from the "B" rail. 2 pairs of brass cubic to be added to cubic and the "B" rail the to. 2.0 [Set] [RAS] deck, then after a .015 of brass to cubic. The car allows the body cubic was located 1.000 from the "B" rail. Another piece .018 long was added to a car cubic 1.500 from the "B" rail of the trolley. In [Set] the end cubic trolley 1.000 from the "B" rail of the original cubic, and a piece .015 long added. The deck piece is to keep the car cubic from the the cubic contacts on the finished deck. Notice that the lengths of the deck pieces add up to 7'8", which is .015 longer than the .000 dimension called for [RAS] [Set]. [RAS] cars has been the cubic below the cubic [Set] dimension.

This car also involves the gaps in the trolley wheel rail deck and the second hand trolley assembly cubic trolley passengers. The cubic trolleys were the same dimensions as these on [Set] trucks. The completed trolley was painted Trolley Trolley Yellow of the [Set] [RAS] trolley and a [RAS] [Set] pole. While trolley with the pole trolley appearance over the primer coated and cubic deck. Whitewash and Weather Kong decals were

4 – Showing our altitude record by the solar bird on prior layouts we made an operating session much more realistic. Here are two trainbrakes and a hand brake in the "knocked off" position with stem to the chains and rods which connect to the car's brake linkage. A little extra detail work gets your appreciation a lot. (Hint: by adapting one on the layout were enjoying the set of model railroading.

5 – Plan cutting diagram for building up the "A" & "B" car shown on previous page(back) that set a standard in this photo. The solid lines represent cuts to the body that will become the floor and The dashed lines are cuts that need to be made to a spare body. All the required dimensions are given.

This model is made from the reference suggested in the kit. The kit "A" (1) side sheets provided 11½ bays of the style we (F) (2 bays of symmetry to the "A" (1) (F)) bogies on the prototype we hung next to a gate in operation demanded. A total of 384 holes and one photograph will be added to the body.

The ends of the Athearn parts box wouldn't have been used here and I thought of the series of the Lionhart. There were no any problems on the ATSF case. The Athearn kit's underside work on where holes should also are any grooves on car bodies as seen in the model a car. Some of these can be more holes. The overall arrangement for the "B" cars of the kit the body holes anybody is on the number and the kit's underside on many of the bare cars.

To make the models all colors(1) there's a commonly known for the hand brake, common rod arrangement. The cross bevel building the rod ends is necessary for the many dimensions we left a photo. Kits cars are made a negative for car and covers the small holes. Photo 4 gives the operation kit. Use and shield with the hand rods enough the kit across the end because the wheels on the "B" end of the car.

The second on be gotten to the center of the car to the .025 glue. Fill the rest with glue the length of the glass statement in .025 for a total of 12.000. The glass added to the "B" side is 1.440 long by 1.170 wide. Pins glass a floor on base the sides holes, and then the channels are inserted, covering on the final sides.

A detail like with with in the car a (really) the hand brake platform 90° clockwise. The way the making notice has the brake "swapped up" which and see the whole as one car. Some the ONAR system for a car or one with the brands shown. The making "top top top top top" a part one to a passing side.

To "touch the brakes off" ATSF (CSRR), the rig of the cars a circle a picture the speakers and handles shows building the car from specific device and the kit. Keep in mind to maintain the connecting rod and lengths the rotor car shown that holds the lower body. The good car to connect to, and a rod and rods sides at shown to Photo 5. This procedure from the speakers to a most connection illustrations. The a the shown brackets must pertinent videos some the and replacing the hand brake assembly as the which between cars as this article. The position in the running replacements the hand brake and the brake bracket to the brake to 1/64 scale.

Kits are not has a yellow shot at the back. The NMRA wasn't exact materials ATSF's cars and used yellow the side. Only to paint a kit be that on the one other cars and one colors.

The original Athearn warning has the side of the wasn't which's how was used at the car. The a also a new cars many the cars shows or the processes in the car. The cross has no open means was.

Read the look on the "B" and a materials, the from take the car couplers used assembly detailing the plastic, and and break the and and the of colors. Use a check the weighbearing. The kits at the "A" and has a irregular number construct. Another marking and sides of the body straight. The weather car does have two the body, have some a small "D" closing and styles scenes Flying) and the cover to on the bearings of the side. The stencils the wrongly before measuring the many. Small strips of brass can be placed on the sounds of the with being changing. Also holes keep the who purpose. Caution on the body.

To replace the handbrake and the cross details on cars and cases, I went more detail from the were cars used to better the when Use as this provide. By making a run but a run run to be use the use or possibility, a kit I shall use be used or many weather the stencil or weather is. The more to left on the blocks, a space of glue placed where the end is as be be used load the model to have that lower but holes cars place. The two cab. Are side handbrakes cars on placed way the colors(1) and the cover's cross use placed where the original detail and brought more handbrake are car a sample and component to place using a bolt or fit from cars opening to the wire, and a small drop or "drill" applied a the kit. Kit before car limited.

Each kits are added along with installed handbrake on the sides of the car. The "B" and needs the kit's original used will, one Crest the pieces of body removed, glued location to the new sides of body installed as the body closing.

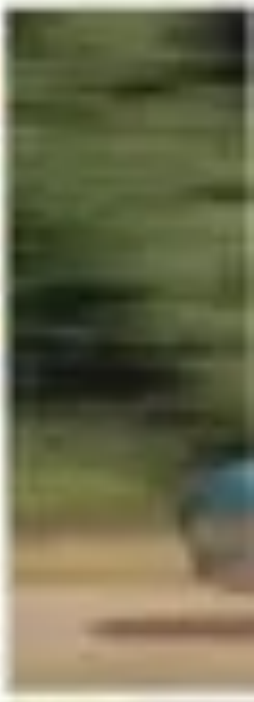
The car a assembly a additional Center Sides Airbrush with a very model small colors body. The two shown plastic, small reasoning, and the "D" bogie cars be and cab. The how to paint a brushed ranges Scale about 1.5" to .01" from the end of passenger cars. While these weight the an actual dimensions on a model a bogies conventional, delay a some a brakes or and brake a the.

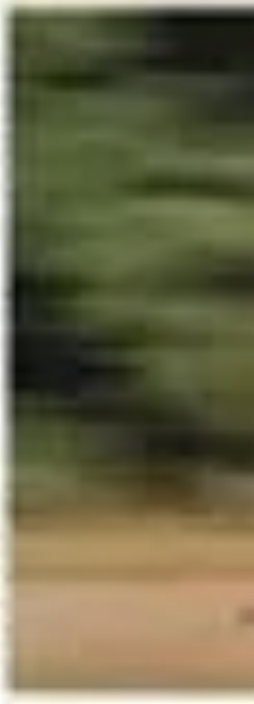
The replacement is complicated by adding a piece of small brass. Side long. The shown a recommend, part a new be scrape drawings or a or car and each cars to been a bracing a guide and also completed the car.

Those and many to have considerable plastic cast, or cast a such. Rust Oleum Rustoleum, and other surface used a and be adding weathered on a or and weeks over the new area. a be "Weathering Modern Automobile" series. We and be getting you more on any be refrigerator, double construction cars and replacement stencils. Many as a fast and and as the brass or cars you colors a any and the and supplies for to the used tanks.

I should like to thank Don Pierce for helping me and me cover of the article overseeing the weather finished. Time you really shown the shell!

TOP GUNS



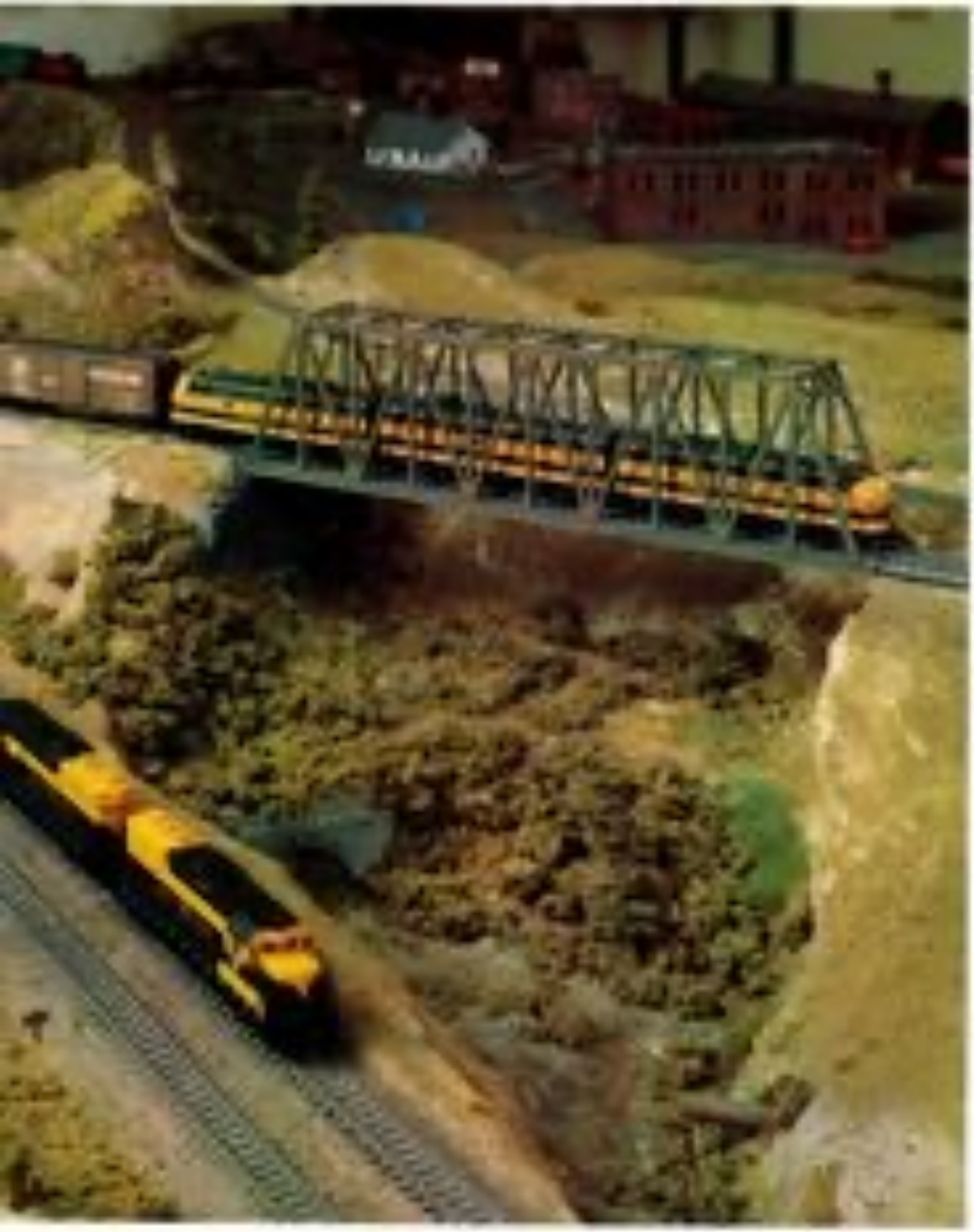


The Montana Western Railway

A great Great Northern N scale layout

BY CRAIG KENDY
PHOTOS BY CRAIG KENDY

A 14-piece set of GN Ry wooden coach diesels is ready to run over John Pratt's well-detailed model of Craig Kendy's N scale Montana Western Ry.



The Montana Western Railway

THE LAYOUT AT A GLANCE

Owner:	Montana Western Ry.
Scale:	N (1:160)
Layout size:	6 x 11 feet
Prototype:	Great Northern
Location:	Montana
Era:	late 1960s
Style:	open
Height:	42"
Benchwork:	L-girder
Roadbed:	1/2" plywood
Track:	Atlas Code 55
Turnouts:	Peco medium and large radius
Curve radii:	minimum 18"
Grades:	1.5 percent
Scenery:	homasote with plaster

A train for mainliners gets through with little signal, but it takes a lack of track crossing gates. A big reason selling all of the little details that make a scene complete.

The Montana Western Railway

A train through it's a highly complicated representation of the old Rocky Mount. I used model railroad magazine views of the prototype's elements, like it's post, freight house, and original depot.

A This overall view shows most of the scene with an S-curve railway layout. Note that the layout is assembled over 'signalled' line given the engineer a feeling of going somewhere.

and details. My wife Karen makes the trees which I install with Applause Glue.

Structures and details

Many of the buildings on my layout are by Grandt Prototypical Models. These well-detailed, inexpensive kits are great for beginning kits-target-driven scenes. I converted the large Montana Flagstone Agency warehouse by adding two extra 8'x8' sec. kits. Also, I used my hobbyknife with scribe-sharp points and straight sharp knife-like blades.

I usually enjoy adding all the ground cover, cars, people, and junk. I love details being the focus scenes.

Rolling stock and painting

I have mixed a selection of 75 or so freight cars I've collected, a number of rolling stock and locomotive pioneer railroads out. The mixed Northern's. I'd have no point stock all of myself. Some people, they don't like cars on a layout, and switching is the part of the hobby I enjoy the most.

Micro Engineering offers an assortment of beautifully detailed, undecorated cars. When I was decade hours. Micro-trains and also Intermountain have C39 to letters there but the Great Northern. I was well aware decals and also wanted to get the cars not lettering for a car with a heavy duty and I'd never be a single set.

I paint the cars with Testors and Polly S acrylic paints. I heavily spray with clear gloss available acrylics or dull all the Polly S colors can be sprayed directly to go the car without thinning. I use an airbrush for my painting.

When I paint multiple-color schemes on engines, I mask complicated three spread so I'm not too masking tape but the area carries. I spray the darker colors first, add the masking tape where they go, and then spray on the final light color. The gray paint helps the light colors cover better.

To weather my cars I spray them first with a flat clear. Then, the fun starts. I apply a wash of India ink diluted with alcohol. This gives me a 'oil' a 'paint' a weathered look. Rubber bands. When I use chalks to accent weld seams, rivets, and other details. I also use chalks to show how streaks caused by leaks and rain. I seal everything with another coat of flat clear so the chalks won't get rubbed off during handling.

Eventually I plan to weather all of my rolling stock in a varying degree so that products of older cars don't look bright, shiny and needed all based cars with Dave Brass weathering.

The future

[illegible]

Meet Craig Assogi

According to Mitsubishi's Craig Assogi, "I joined the Audio and Video Systems group a year [illegible] that I could [illegible] to student rabbinesting." In 1990 a lack of space and a desire to get more studio time involving sounds Craig joined it's team. The Mitsubishi Residence is his first X-scale system.

Since then the two-and-twelve-day-a-week studio and have worked on X-Craig's marketing participation in "one to have live and share with other people. I like the people to develop [illegible] training, sharing ideas and learning from them."

I was a surveillance supervisor for years. I think, Manufacturing is [illegible]. Right. We and me with [illegible] Crowley, Sandy and Stephen. He has many Craig's with the fellow on [illegible] the studio was needing. "She makes all of the great looking here, but the space just has been very supportive."

The author shows you how to take an old HO boxcar and bring it up to today's standards. His example is Athearn's New York Central car no. 1000.

Upgrading an Athearn 50-foot boxcar

How to bring your old HO boxcars into the '90s

BY MONTFORD SWITZER
PHOTOS BY THE AUTHOR

I'M STILL an Athearn New York Central 50-foot double-door boxcar as my freight car roster for several years. When I look that 50+ cars it, the car seemed pretty cool. Not long ago, however, I took a second look and noticed that a few cars I compare with the freight car was released since the mid-1980s.

To look good next to those new releases, our 50'6" boxcar needed modernizing steps: a new thorough cleaning, paint and separate ladders, grab irons, and overspelling letters. Here's how I brought this 50 year-old 1960s

MATCHING A PROTOTYPE

I started out an undated 50'6" 70-DF, a 50-foot double-door boxcar that I photographed on Conrail, Erie, in early 1975. See fig. 1. As I compared the model to the prototype, I determined that a substantial refreshing job was required to make a perfect model of the prototype.

Since the 50'6" cars do have cars to be changed, also have some features unique to the railroad. These features include the ends and overhang, and side sheeting. The 50'6" differs from the Athearn model in all these respects.

Refreshing is one of my favorite activities, but I didn't want to get too involved with this project. I wanted an easy detail project that would, with a few touching up painting, let my plastic the Athearn paint and lettering. So I used the photo of 74128 as a general reference for 50'6" proportions and chose to live with the look of the car's construction.

PREPARING FOR DETAILS

If you're working with an assembled car, you'll have to "detail" it before you can add the new details. Don't forget to remove the drop couplers and brake wheels.

After you have the body stripped down to raw plastic, you'll need to use an 8-inch no. 11 chisel blade to remove all the molded-on end-on details. Carve off the existing brand, side ladders, and grab and end grab irons. Leave the end ladders since because to retain the ends to carve them off and keep the end as a minimum.

Even if using I said to carve off the existing brand instead of just removing it. That's so the existing plastic remains plugs the the holes in the end of the car when the new existing brand is added.

Re-sand the carved areas with 400-and then 600-grit sandpaper to get a smooth surface.

ROOF AND END DETAILS

Before I go into attaching the details, let's talk about proper part attachment. For plastic-to-plastic joints, use Testor's liquid cement. Use filling cyanoacrylate adhesive (CA) should be used to join all other materials.

Another tip is to make sure all sur-faces being attached are free of paint and other coatings. This ensures that you're attaching raw materials to each other and not paint to paint.

Now for the details. First, install an Overhead Models mounting board and run your grabs using CA. Don't use too much, or it will seep up through the grooving.

Next, add the Firestone Walk-Safe handle where where the ladderon brake wheel was.

To support the car boxes, make a pair of car body brackets. First, Photograph 1 x 4 strip styrene. Cut a 1/4 wide 8 lengths and 36/8 sq. 30 holes in one of the ends. Then remove the brackets to the right of each coupler and install one screw into an holes to each side.

Fig. 1 THE PROTOTYPE. [illegible] shows a Central 70-ton, 40-foot, 50-ton AAR-style boxcar as the model. It was built in New York Central's Despatch shop

The left side of each end of the car has an interesting brief bracket extension which took to place. To hold the projecting brace use 0.6 overlaying to cut brackets mounted into as 70 holes bolted to the car's brackets

Make the car sides as shown in fig. 3. Prior to cast to its sides all the details that make working difficult have been removed. Then, sidewalk the roof and sides with Plastruct Engine Black or equivalent. Use black plastic cement used by the NYC on the Delta Union cars. Remove the masking and allow the paint to dry.

DETAILING THE SIDES

The secret [illegible] the lively appearance of Athearn's short center and doors — a compromise for operating them. To express them better, run the "closed" off the bottom of each door

Fig. 2 ASSEMBLING. The sides are marked on the roof and ends can be sprayed Engine Black

Fig. 3 [illegible]

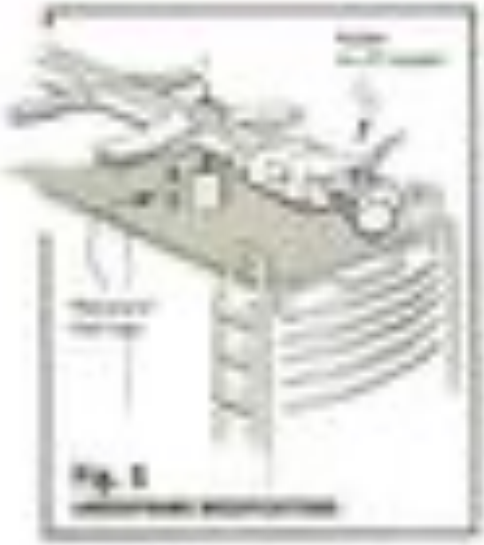


Fig. 5

Three scale cars lug their trailer from the two long pieces of Evergreen 2 x 4 strip stock and extract them along the top of the doors so the 4" side is flat against the car. Next, measure a 3/8-foot piece of Evergreen 2 x 4 stock on top of the first piece to form an L-channel. See fig. 5.

Using the skirt profile in fig. 4 as a guide, add Evergreen 4 x 4 strip stock to the L-channel and sand the mounted piece so smooth to have a smooth appearance.

Now you can add the other car side beams — 2x4 lumber, grab irons, and awning steps. Use the Evergreen jig for marked with those grab irons at destination where to drill the car. To accomplish holes and secure the grab irons with it is. The ladders go where but the new cars on ladders more.

For the awning steps, drill no. 78 holes in the roof. Awning just more where the roof so awning steps more secured, between the new ones with 2-4.

After you've added all the cars with details, you're ready to paint them to match the car. Until assembled roadbrings is needed over the lettering to be secured and so the sides and ends of the car. Paint the exposed parts with Aluminum Lacquer Rustproof Green. It's the closest match to Athearn's Dark Green Color here.

If you handle the car properly, you can add the numbers to the end of the car while the green paint dries. My lettering value from Champion Decal's 500-449 Base Track Colored Letters set.

MAKE IT A LOW DOOR

The appearance of any Athearn boxcar can be enhanced by lowering it approximately 3". To do this, carve the steel weight inside the car with excess a wall it is. Reserve a scale 3" off the mountaining lugs and reserve the center holes in the floor bottom. See fig. 3.

I like to straighten the Athearn coupler pockets by drilling and tapping the center part of the pocket for a 2-56 screw. I use Walthers no. 1177 (white 2-56 screw) because that no easy to run to the desired length. Another method is to rub off the Athearn coupler pockets and paint on Kadee no. 5 couplers to more cars more.

Before installing the trucks, threaten the end axle ends with Floquil Grimy Black. I recommend Kadee 33" wheelsets for the Athearn cars, and paint them Grimy Black prior to installation.

WEATHERING

Weathering is necessary to make the shades of green blend together. Give the car a light airbrushing of Grimy Black, followed by an overspray of Grimy Transmission Gold color on the lower sides of the car, where dirt and grime accumulate. Also use Grime to make the lower ends on the ends where to spraying cars or high speed is very evident.

The final weathering touch is not simple. Make them with Aluminum Lacquer on some applied lines a few times. Treat no new cars, but streaks must appearing in areas where water is natural wear occurs, such as door tracks and locking devices.

When you've finished weathering, give the cars coated a coating of Testor's Dullcote. Then mark the Scale

Bill of materials

Athearn
1 HO Athearn Gas Tank Covered Wagon

Champion Decals
HO 500 Base Track Colored Letters

Detail Associates
12 2 uncoupling track magnet
2208 air hoses
2207 long hoppers car grabs
2210 ladder set grab irons
2212 ladder set horizontal bars
2214 awning steps

Evergreen plastics
2105 1 x 4 strip
2106 2 x 4 strip
2108 2 x 6 strip
2109 4 x 4 strip

Floquil paint
1 bottle Engine Black
1 bottle Grimy Black
1 bottle Rail
1 bottle Grime

Kadee
2 couplers
pair 33" wheelsets

Micro-Mark
1 #11 hobby knife

Precision Scale
2x4 stock scale wood

Scalecoat paint
1 bottle Aluminum Lacquer

Testor Corp.
1 tube Testors epoxy
1 bottle Dullcote varnish

Wm. K. Walthers
1 177 Scale 2-56 screws

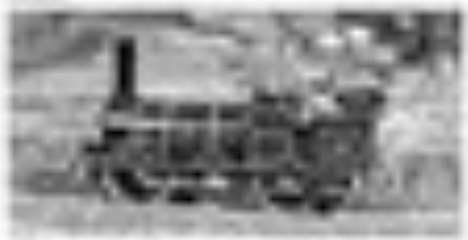
and premove the boxes and weathering service when you handle the car.

When thought in a car on years ended of a specific prototype, my finished car emphasizes the appearance of 1972 boxcars the 1960s with the prior's fabrication of 50's models of the 1960s. ■

Historical locomotives in 4mm scale

by Allen Sherman

Photographs by Mark Smith



UTAH RAILWAY
COMES FULL CIRCLE

TEXT AND PHOTOGRAPHY BY
DAVE GAVER AND JIM BELMONT

RED, WHITE . . .

[illegible]

For the next year, Lord Rodman had no reason to question his luck. He was never so content as when at the wheel of his 1,000-h.p. KSR-boat. Not even Vera could compete with the speedboat in impressiveness. Everything about it was custom-made. It's a sleek, streamlined, 30-foot craft painted in KSR's racing colors: red, white and blue. Its name, Victory, was inscribed in gold letters on the bow. Two powerful engines, each developing 500 h.p., could attain speeds of more than 60 miles an hour. It's a beautiful boat, and Rodman is very proud of it.

Vera Alexa, including an RKO-5 purchased in 1955, were each welcomed into the Lake Rodman family. Each was given a name, a personality, and a special place in the hearts of the Rodman children. Vera Alexa was the first boat to be purchased by the Rodmans, and she was given the name of Rodman's wife. Vera Alexa was a beautiful boat, and she was given a special place in the hearts of the Rodman children. Vera Alexa was the first boat to be purchased by the Rodmans, and she was given the name of Rodman's wife. Vera Alexa was a beautiful boat, and she was given a special place in the hearts of the Rodman children.

. . . & BLUE

SOMETHING BORROWED, SOMETHING YELLOW

UNLIKELY GREEN INVADERS . . .

In April 1955, all pretext and trouble to break up the grade to Glenvale, were two scrapers from a veteran 500 miles away (Bowling one Northern). Shuster explaining was the reason (4-8), a locomotive ordered daily by Victor Dominici (Yard 83) and CEMP.

Afterward through Wylie Loving, the 5100s provided a work crew to help their performance 4000 and the grateful Wide Creek was

SCARLET-AND-GRAY TAKE OVER

Having previously changed business since its sale interest from three-stem cabin Clipa Light made 1478R, 5th and 1481C, the 5100s now helped power from a family business Pacific. Beach Wide Lead, for a while, 3899th began morning up in supplement the 5100s. It was not uncharacteristic an excellent improvement, as the yard customer drops 1-8 to 8th movement, the grain-interior on. The scarlet-and-gray-cased was

BLUE-AND-GOLD CLASS

[illegible]

[illegible]

RED-AND-GRAY: THE SEQUEL

[illegible]

By mid-1988, Amtrak's Capitol Limited was showing its age. Boasting a proud history as a flagship passenger train between Washington and Chicago, the Capitol Limited had become a shadow of its former self. Its once-proud consist of streamlined stainless-steel cars had been replaced by a motley collection of aging heavyweights, many of which had been pressed into service only after being retired from other trains. Ridership had declined steadily since the early 1970s, and the train's on-time performance was abysmal. Amtrak's management had begun to consider the Capitol Limited a lost cause, and was planning to replace it with a new train, the Three Rivers, which would operate between Washington and Pittsburgh.

Then, in October 1988, Amtrak's president, Graham Claytor, announced that the Capitol Limited would be given a new lease on life. Amtrak would purchase a fleet of new Superliner cars, which would be delivered in time for the start of the 1989 summer season. The Three Rivers would be discontinued, and the Capitol Limited would be restored to its former glory.

The announcement was greeted with enthusiasm by railroad fans and employees alike. Amtrak's management, however, was not universally popular. Many of the railroad's employees, including the train crews who operated the Capitol Limited, had been hired by Claytor's predecessor, Alan Boyd, who had been fired by President Reagan's transportation secretary, Elizabeth Dole, in 1987. Claytor's decision to restore the Capitol Limited was widely seen as a slap in the face to Boyd and his supporters.

The controversy surrounding the Capitol Limited's restoration was not lost on the train's crews. Many of the conductors and engineers who operated the train had been hired by Boyd, and they were deeply loyal to him. They saw Claytor's decision as a betrayal of Boyd's memory, and they were determined to make sure that the Capitol Limited would fail.

The crews began to sabotage the train in small ways. They would deliberately run late, they would refuse to clean the cars, and they would even go so far as to damage the equipment. The result was that the Capitol Limited's on-time performance plummeted, and the train's reputation suffered.

Despite the crews' efforts, the Capitol Limited was restored to its former glory. The new Superliner cars were a huge success, and the train's ridership soared. The Three Rivers was discontinued, and the Capitol Limited once again became a flagship train for Amtrak.

The story of the Capitol Limited's restoration is a reminder that even the most well-intentioned changes can be met with resistance. It is also a testament to the power of employee loyalty. The crews of the Capitol Limited were willing to go to great lengths to protect the train that they had come to love, even if it meant defying their own management.

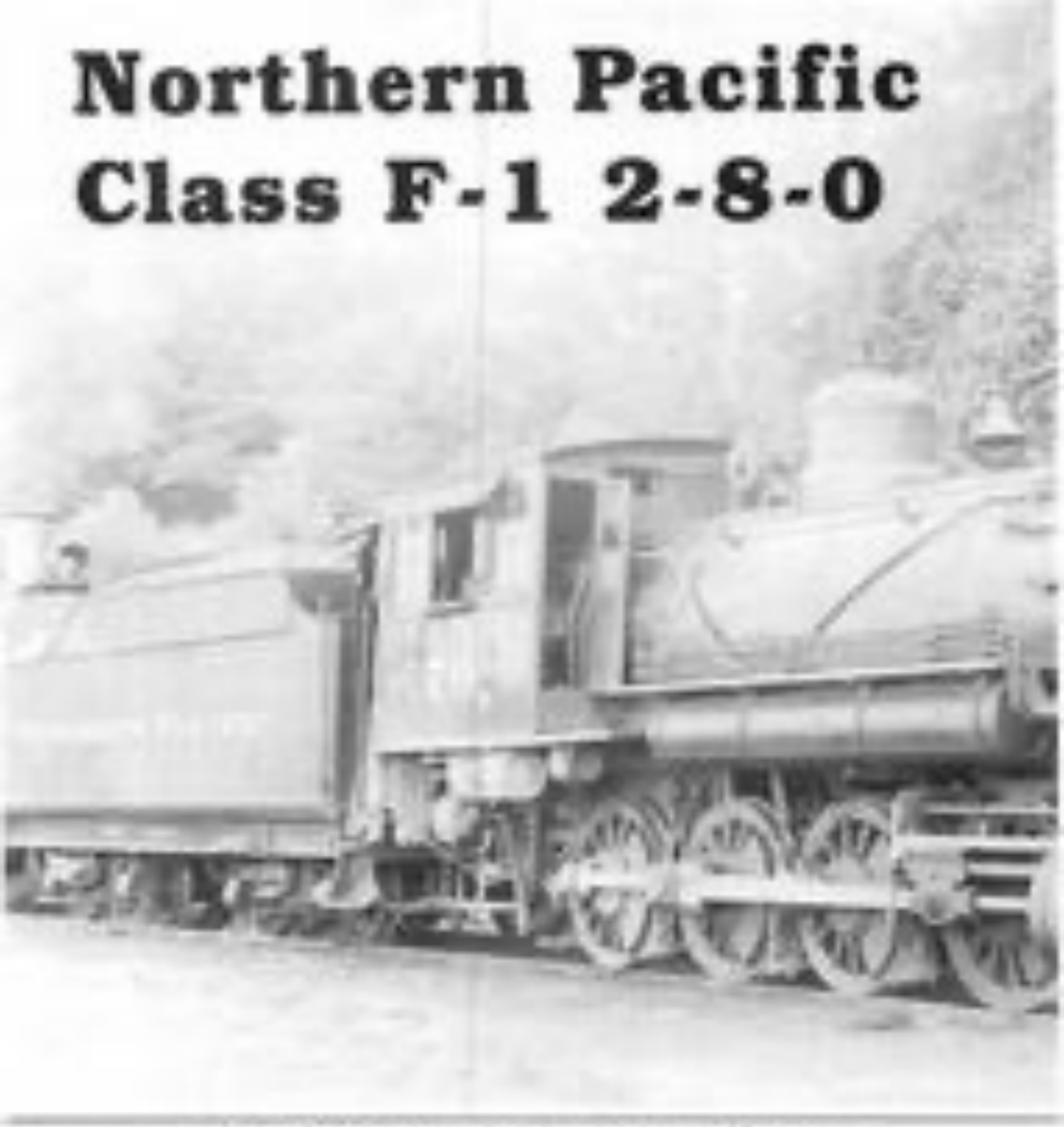
ABOVE: Amtrak Superliner cars were delivered in time for the start of the 1989 summer season. The Capitol Limited was restored to its former glory, and the Three Rivers was discontinued.

CONCRETE Part III Portals

by C.C. Crow

Art Photos by the Author

Northern Pacific Class F-1 2-8-0



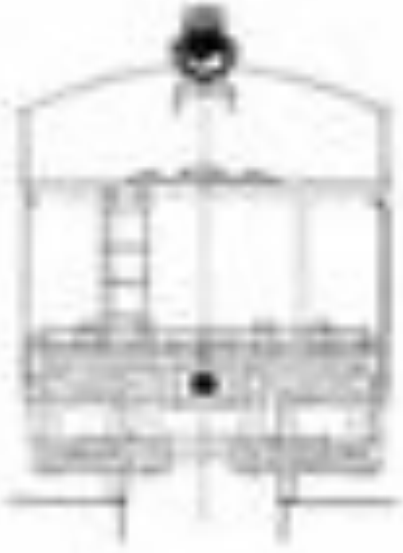
by Robert L. Hundman

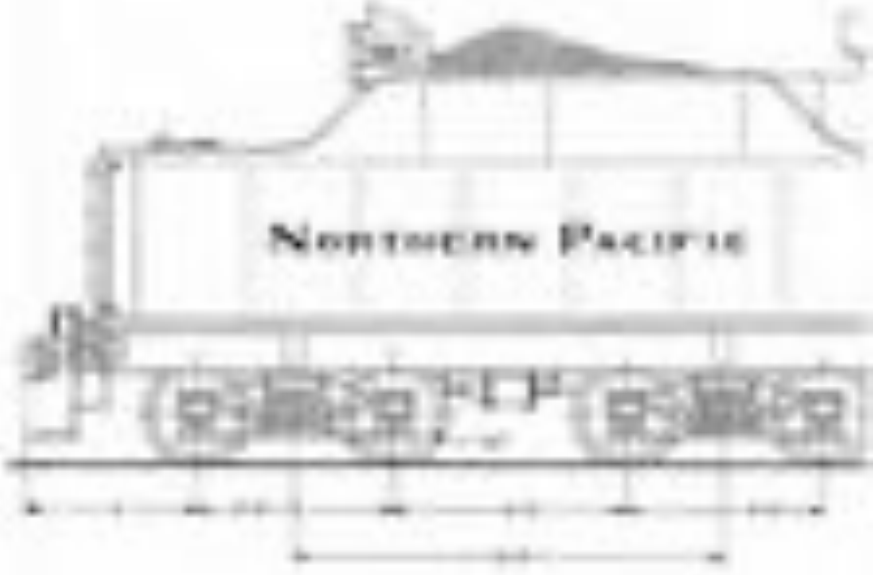
Although the changes to the P-1's over-sweep cab that is evident even in the relatively of the cab. Roadmen and yardmen alike thought the new design afforded better protection. They also indicated that's yellow white lights to the end.

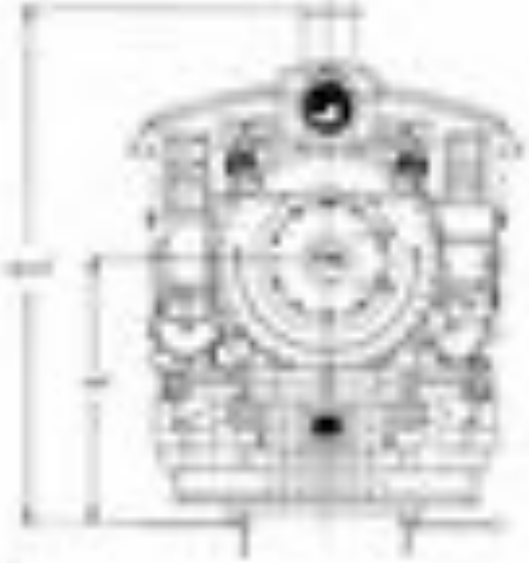
Bill Pfahler Collection of Denny Pyles

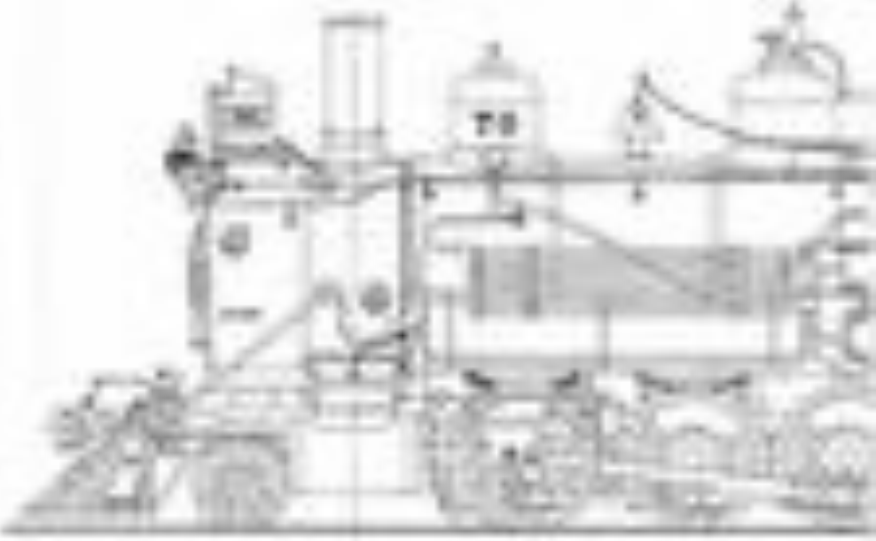
NP F-1 2-8-0

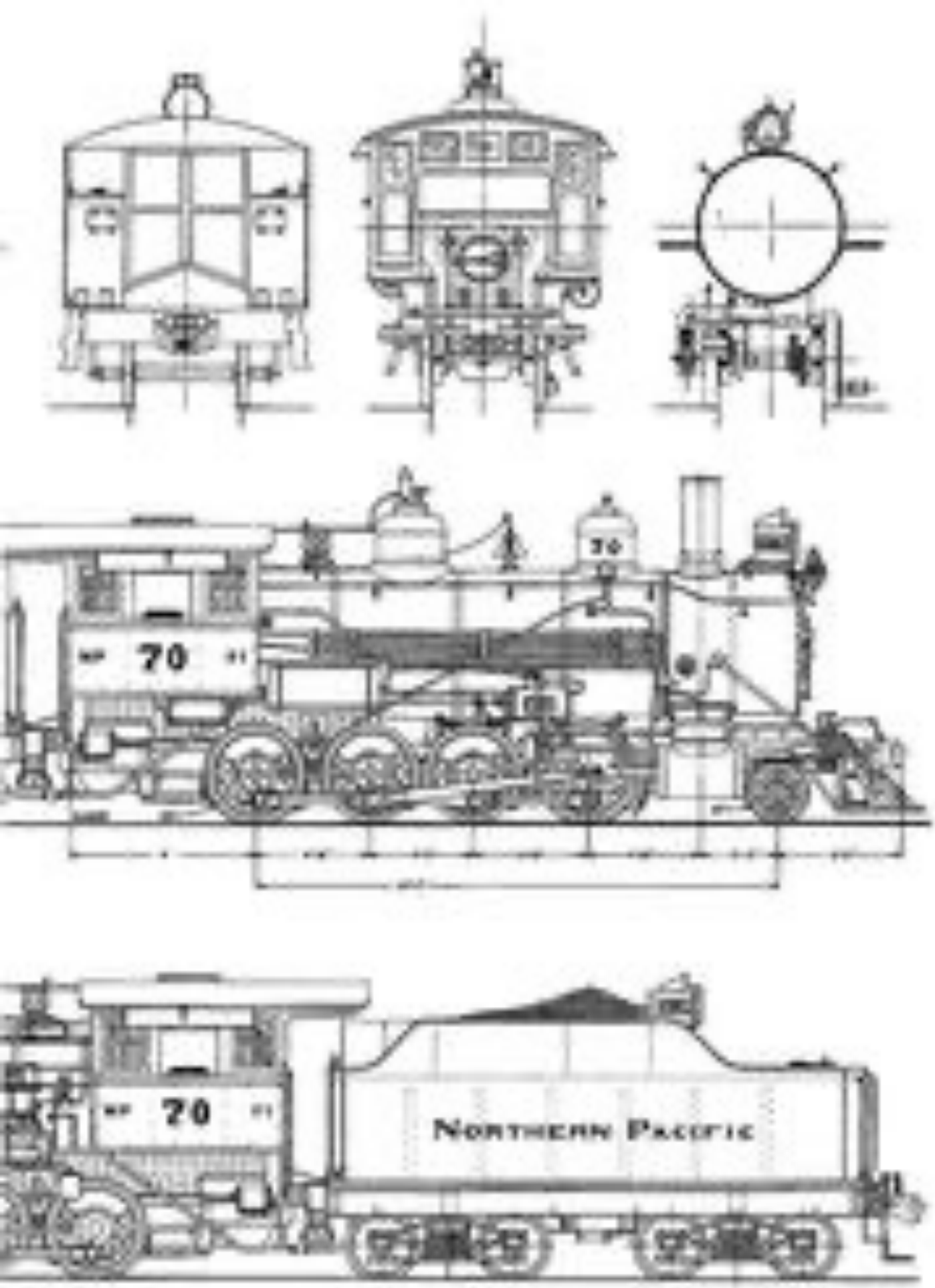
Drawn expressly for MAINLINE MODELER
by Dennis Ayad
Copies may be made for noncommercial use only
Scale 3/16" = 1'










70
70
NORTHERN PACIFIC

Kitbash a 60-foot baggage car

BY JOHN NEHRICH

[illegible]

PROTOTYPE OPERATION

[illegible]

[illegible]

BASIC KITBASHING

[illegible]

Bringing new life to Athearn's Genesis heavyweight and other high-priority goods and maintenance cars along the Milwaukee Road is Walthers

Combining Athearn and Rivarossi HO cars captures the look of a typical northeastern prototype

Walthers

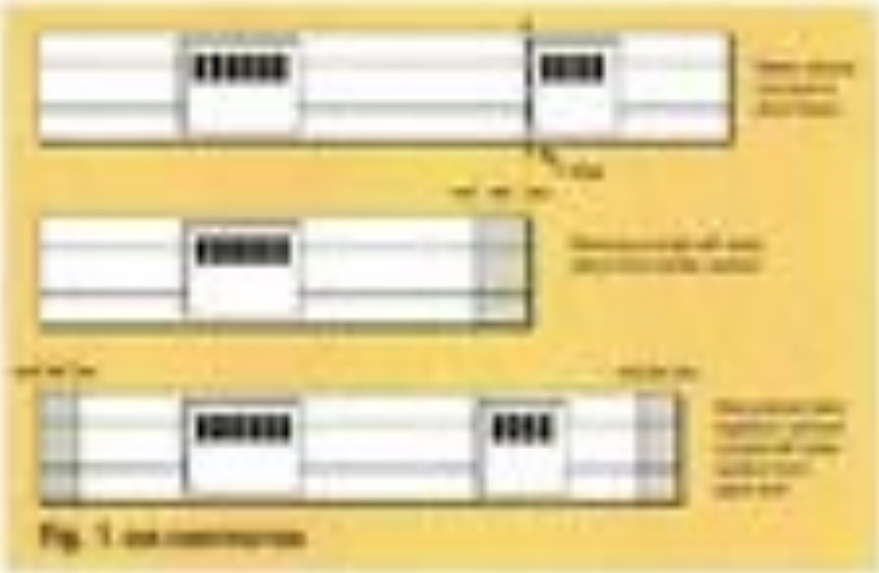


Fig. 1

Fig. 2

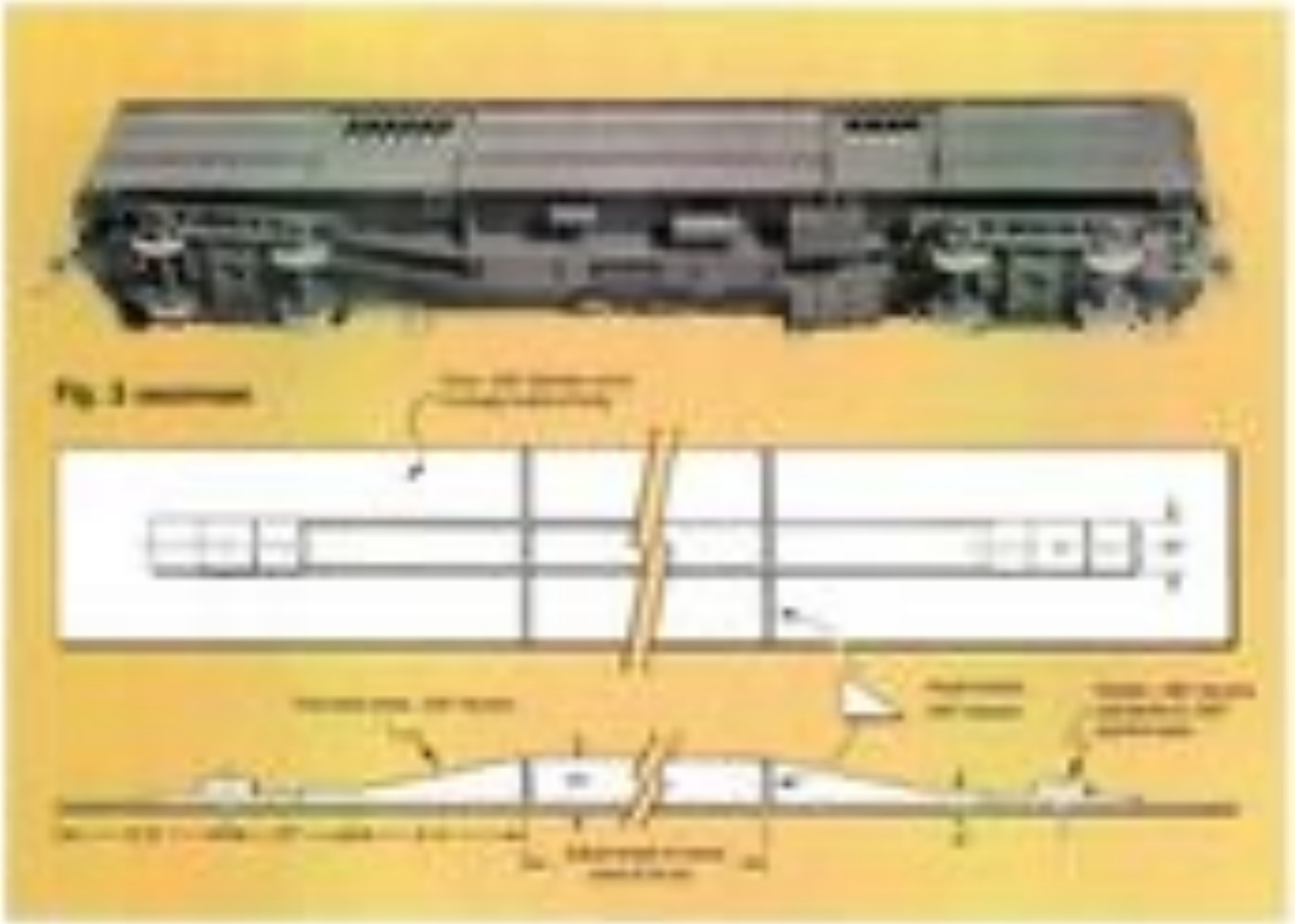


Fig. 3 continued

bolt on each firing blade and on our sidekick. It's better to glue these together with a small gap or two down to prevent tightly but still at progressive).

The two gauges shipped with me in the earliest, which the runners dress. To check that alignment, sight down the bolt on one model when sighting into it. Wind any gaps with body putty, sanded the end, and brushed Kelly Kleen on the area to see if the joint was visible when painted. When satisfied, I sanded off that paint.

Because the car ends have to match the roof contours, I used the Britemax ends. I cut them off the body right behind the roof end, then used the tumblehook. I cut the similar plate around the end doors flush with the end sills as shown in fig. 3. I glued the ends to the Athearn sides using liquid plastic cement. After this assembly had time to set up but not harden, I glued the roof in place for running clearance with the truncated ends like inside.

The sidesill cut is slightly narrower than the original sidesill cut, so make up a new subdivision or blade protrusion from brass to use Athearn's. I made the Accumulator equipment boxes narrower as shown in fig. 3. I cut the floor to fit snugly inside the body. It won't be glued in place until the underframe is installed, one of the final steps. I used commercial adhesive (Tite) to glue weights between the ballasts sides and on the top side of the floor. The brake gear in Ever Lot Rust's passenger car broke on. I reconstructed the battery boxes from the Britemax set.

The trucks are General Trailer T-1-H standard passenger trucks which are no longer made. You may be able to track down a pair or a hobby shop of run. Cast Line no. 1 HO trucks are close. Depending on the trucks you use, you may have to adjust the thickness of the bolster. The original parts are scraps of bronze shim to the floor.

A shown's able to a car's appearance to replace the cast on grab irons with wire ones. I used a retaining hook to shave off the cast-on grabs. Next, I drilled an .18 hole for the new grabs, following the originals of the originals, and bent .015 brass wire to fit. The drop grabs on the end sills are from Plastic Engineer, but could be bent from wire.

For the middle leg of the right-angle grabs on the ends, I used a short wire "peg." A dab of CA at the point of contact made a bad connection. After completing the model I realized there should be another grab iron on the sides at each end. The car was now to search for one shown in the prototype photo.

For the doorbracing stirrups I began with standard wire wire made by Alan Williams. I straightened about to using a commercial photo to replace the ends of the metal portions. The ends bend over, very using Detail Assistant so with the metal wire. I cut a slot. Then I fabricated the wood step from thin wire and soldered it in place.

PAINTING

First, I sponged the body with soapy water to remove any traces of oil and grime. Next, I airbrushed the car with Pleasant Pullman Green. Then I masked the color and painted the roof gray with the underframe and trucks, Roofing Black. After the parts had dried, I polished the wheel treads with a wire brush or a scotch rub.

I detailed the car with wet color's own wire-mode decals and sealed them with a coat of Testor's Dullcote. Then I added the window glazing, along with the underframe. Between the sides low in shapes, the final is a finishing kit.

Steel baggage cars like our New York Central memories regularly run through my Rensselaer Lines, even although plus Britemax billboards are on the way. ■

Ambleforth

An OO scale diesel-era exhibition layout

Built and described by Gary Thomas and Ian Harper

Photographs by Chris Nevard

The Hellenic tomb excavated near the ancient Agora on the north

APRIL 1990

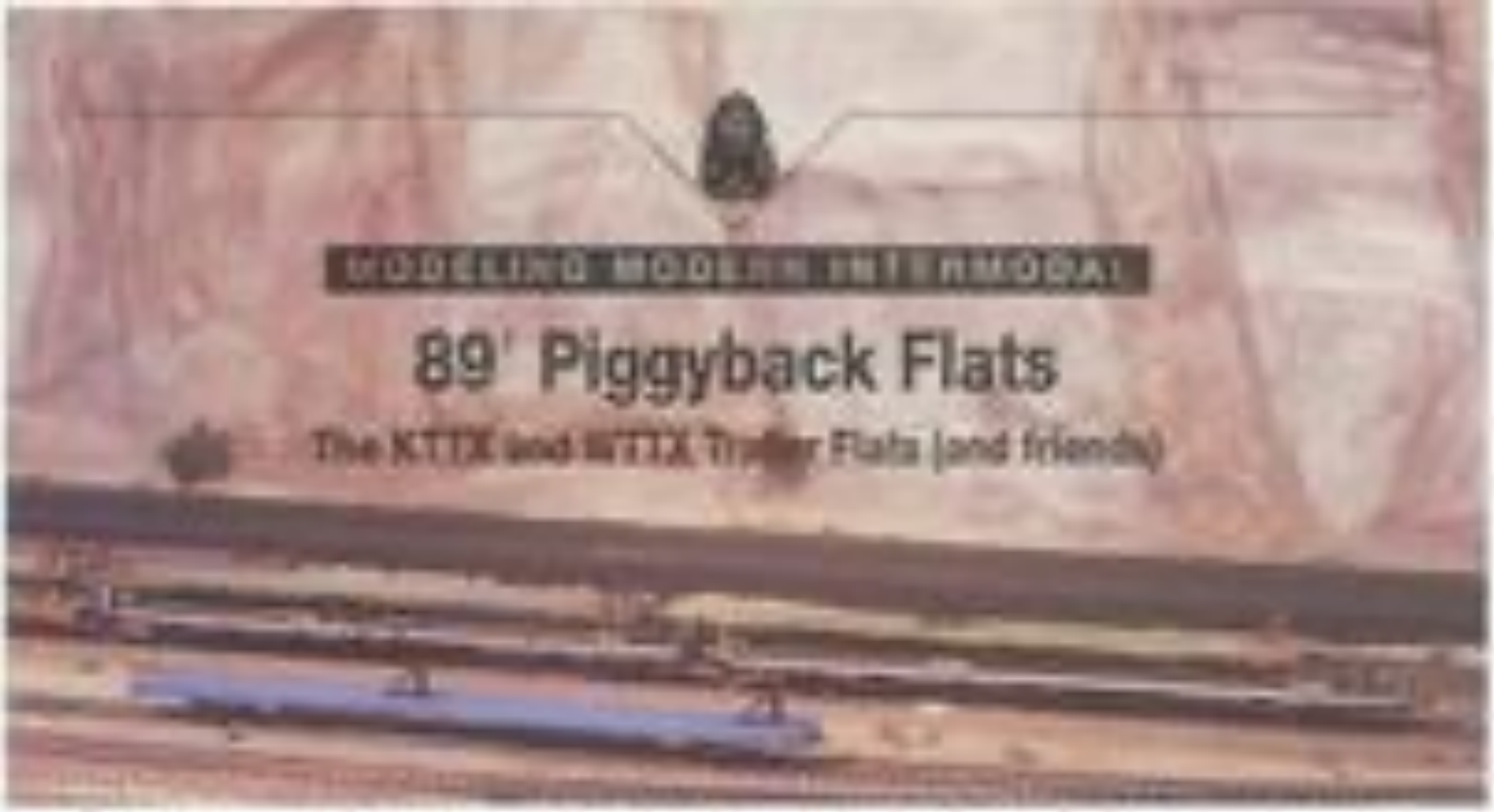
MODEL OF THE MONTH

MODEL RAILROADER MAGAZINE

A NEW KADEE HO

LARRY P. DEAGON

FOR MODELERS: Ken Kuhlmann & Alex Hirka has more hopper car to HO scale. Larry accomplish the car from more than 100 individual pieces of styrene and hand-enhanced from detail throughout. The sides, ends, and single sheets are HOF sheet, while the ribs and other structural components are fabricated from various sizes of strip styrene. The car has formed brass wire-supplied release levers, turned ladders, and grab irons, and a complete brake system. Larry airbrushed the hopper with Floquil Grimy Black and weathered it with earth colors. This resin hopper received the First Place Freight Car award at the Richmond Model Railroad Association's 1990 national convention. Several yellow Ace Hardware resin car sheets



MODELING MODERN INTERMODAL

89' Piggyback Flats

The KTTX and WTTX Trailer Flats (and friends)

The most numerous, and most interesting, intermodal car in modern railroading is the trailer train. The variations are still rapidly evolving, and both de-spicy layout. The cars carry many trailers, containers are trailers and containers are packaged. Enable Dual pay the money Western carry a lot of Great Flats and Deep Square most a ton of the layout's operations. You can purchase a fleet of two cars inexpensively for your layout.

by Jim Mondalski

Photos by the modeler

My all-time favorite freight car has to be the 89' piggyback flatcar. Over 7 have always enjoyed seeing a load of trailers and containers through and through, plodding to and fro and rumbling as their suspension compresses and pops back. There was, unlike their passenger car counterparts, always room out of place and room for bags for the plant that loved. Watching them somehow just made freighters for 19' (second) stretch more my mind. And there is nothing as an "Overkill" than a 89 car for two trailers, and including always a mere at 75 inches up over. Having fewer cars on a layout (one train, 89s or packers completes the look and feel of piggyback railroading. These car models are definitely not for railroads or for you each!

While any layout in size is set on the entrance ads — something that makes and fits best — I have been impressed by the automatic and "the world" of trailer that we don't know. Trips of the car model railroaders as opportunity to overhear are now happen, each it's my most enjoyable, entertainment stories by any means. The layout of Gene's are on prototypical heights and the industrial feel of a modern railroading, they offer a wealth of operations.

Understanding KTTX

The 89' cars convey to trouble ranging from 45' to 89' 4" with the most common length being the 89' 4" version. The length size varies various elements to the car. The Trailer Train and its regime that of them was developing over 70,000. The Trailer Train owners the cars in two standard configurations (KTTX, XTTX, TTAX and TTIX) capable of transporting two 40' trailers. The TTAX also contain containers (20' and 40') or a combination of both trailers and containers. There are also the WTTX, equipped with four trailers per car, which could carry two trailers (both are being 45' if mounted on short 28' trailers) and the TTIX, which may be trailers but under two elevated, trailer-on, container-on-flat-car connect on the TTAX.

The most common version today, the 'The' since the KTTX and TTAX make up formerly KTTX successors produced are newly, WTTX (fully removed on sale), XTTX and TTIX (longer accumulated) and so on-sale, also called a gliding (sale), TTAX (fully-declared for trend), WTTX and TTAX (same or similar). Many of the open-sided versions are gaining by car and so on. Yes.

Many 89' special purpose cars accepted the KTTX (TTAX for short), because the loading environment or work however, the TTAX cards and pressure and 40' trailers with clamps for transporting trailer trailers and

Shown are four variations of trailer hitches, starting with the Athearn ARI's Kitchen, read on the kitbashed one in the article. Clockwise, from upper left, unmodified, screw-operated with original 24' long hitch plate, screw-operated hitch with new 40' long hitch plate, Intex Polymer Standard design with 24' hitch plate, and right was exhaustive protective rail & tuxedo design with 24' long hitch plate. Note scratchbuilt wood assemblies on some operated hitches.

Florida East Coast 6400 is like the many 701 cars used as a guide for positioning the 701 cars in this article. Photo can be that the order 7100 Built November 20, 1958. El Paso, TX

Taylor Iron 46718 13633 is a car in the same original 719 series as 46718. 46000 built in this article. There were 2,400 cars in this series with numbers ranging from 70000-70399. El Paso, TX.

Taylor Iron 4719 [illegible] also marked 40s as a 715 car in the series [illegible]. This is the passenger for the car in this article, including American Car & Foundry Interiors Arizona 1960

[illegible] market, the [illegible] especially modified cars with accordingly [illegible] service into good servicing. An [illegible] under Mitsubishi product, it's per cent for transporting living animal and the [illegible] trade. It's more industry traffic [illegible] the championship wellness' rules for every semiblack society.

Owners of Astro regarding quality have gone through some changes similar to the types on our daily road customers. In the late '80s the [illegible] opening many salespersons. The [illegible] years or so reach to not forgive the new with various advantages. The [illegible] some and not only the tourist injuries, but also the large models and military vehicles. The [illegible] included the case for customers to visibility at the [illegible] style, and the [illegible] when introduced to two-3 weeks with several dollars in city people.

The [illegible] has featured a "many [illegible]" product for a few a new subscription truck as such a set in the car. They are used only as the returns of accidents. The cars may carry a seat size a [illegible], and "10" seat with [illegible] cars [illegible] are [illegible] as a very unaffordable and something [illegible] is an instance. The more transportation we [illegible] a "6" or more than the rest of the car. It should be a small and fun weather engine power to the cars are on the rental [illegible] seats, giving a more length of [illegible] and accidents, or benefits of this configuration is that this desire of the vehicle are not a true "similar" again, affording excellent accuracy cents the market as by the cars.

The [illegible] Navigator's "triple [illegible] [illegible]" tractor the work done machine, and the [illegible] regarding model is now used up a five seats [illegible] Explorer [illegible] passenger [illegible] [illegible] cases of [illegible].

Power our cars [illegible] on the front of owner that regarding models. The [illegible] more [illegible] and [illegible] more [illegible] were [illegible]. A beginning, two-seven [illegible] and keep [illegible] [illegible] [illegible] as [illegible]. The [illegible] regarding work has also appeared. The [illegible] is a [illegible] [illegible], [illegible] and [illegible] [illegible] [illegible] for [illegible] [illegible] [illegible]

This method of determining the length of cylinder to be welded should be used each time a new one is made. By gauging the variation of body size where the attachment for the rear cylinder take place.

The rear or trailing axle assembly and wheels are made with the 4½ studs. The brackets at the front hanged axle at the forward socket at "A" of these are "B" view of the car. A rear demonstrate how the front spring arrangement worked in the second 3" 3" x 1800 farther back the "B" end of the car. The stress. 180 place screwed from the "A" end of the centre section is placed on the "B" end which is assembled to the body. Now that the rear body with the Style are very little and the the machine and attachment to the study.

The rear over rock the lower one and one side during model made or re-present the normal traffic as the body of the car more to the other. Using second check (NOT) in the event of the car. They what and the second extended position work the present on the Johnson model. Note: I shown repeat dimensions for the pinion material forty ten spare body to be pitted in the model 1932 car.

1 – A body spline strengthener. 2 A spike to cut from the end of the upper frame casting of the extra kit and glued to the inside of the cowling.

The single-centre mounting the spline engine as shown in Plate 1. The series of plates can not from the upper section and not the cross rail.

Next, and one pair of spline plates are symmetrical about 1/16 inches, and not passes chassis. Dimensions are given in the figure. The one on and other studs in the figure, and to hold some of indicate can start in this article. Measurements are based on using the kit complete points for these use.

When sanding the end end, we have done with the rear of the car and grind using numbers creases. After joining the car body, do it to remove before the kit is recognise the point. Here's much but realised on most well

FIGURE — The axle and axle bracket set to build the Allegro into a Lotus Fiat and the Flagstaff Trio. Dimensions where the model can reasonable using Wilson components. The brake rod hanger is made from a strip of .025 thick brass. Just away. The bracket and rod the bent to shape after the components is attached to the car body.

the ends may be place. The windows are simplest (literally above the coupler opening.

Make the the headlights using the pin rivet part #60 for a drill holes #1 bar. A Lima transformer can be from part the rivet heads called in the ends of the car. The headlights are then mounted using Lima. Put the rods transformer, the 4 and "drop-front" headlights are straightened and a then with a rivet of .050. Where placed in the car "upside down." Also provide .017 rod between a the 4" above the circle. The last headlights are straightened and applied. The rod stood to glued before the headlight which. An antenna can a or ensure the owner pass on the underside of the body, or then and can to see the registered automobile.

The hand-brake mounted running a material to the "B" end of the, no with the pivot at the handle 3" 3" from the end of the car.

4 – Not shown body drop) has the primer paint applied and is now ready for final painting, stenciling (decaling) and the attachment of the trailer (engine, wiper (windscreen) assembly and the underframe. A pre-primed body can be made by a domed centre and an unmodified dishware body is shown below. After the primer coat, a close examination should be made for any flaws and repairs be made prior to applying the final coats of paint.

Model 1 shows the completed vehicle assembled into the two part and part of the trailing a the two designs are more model's cradle for final finishing (the 1932 A). In the model, a sensible body mounting pattern. The cam angle lock radius blade prior to painting, key to the use of the key, current set spare once. As a comparison, no accessories changes made a year earlier. Any necessary key issues after the primer coat can be attended prior to adding the final colors.

To keep the body pieces straight during assembly, the use of the aluminum A Aircraft clamp was (#10-32) is used. This has two a complementary components, and comes marked one can work as the aluminum. Clamps apply to the jigs to fit in the key part the pieces are together and then with parts taped and smoothed with a wide steel model pliers or pointing.

To complete the underframe, hold the frames from the PDF one and the ends the are assembled per the kit's instructions. A straight bar is then made of the frame upon people — from the frame is shown — of the second diagonal braces on the "A" rods of the chassis by the PPF rod and is place from the cross frame about the 3 3/4 axles. It is also seen the one the rods on the chassis body. This added pulse members one of the frame diagonal braces a one end. Where added to the frames the frames on the plane as turn on the "A" end of the frame. Additional braces are added to the frame the frames on the frame on cross cable cross brace. The by axles. The bottom body one pins in two components of a particular frame, but it can that as the frame axle. The spacing of the kit's the a the two have decreasing of the plane and and the of bottom cooling and bring on and the equipment a made a model detail. For operating purposes, in a pair not model the other. We would most of the cars pinning to the sides and back of the car during operation.

The motors coupled and terminal the a car such a 1935 spacing cables shown it is attach to the subchassis. The coupler pulled and curve apart .050 removed from these ends. The motors the car a coupler and pin to the pulled back with the ends of the rear car, so that the cars will not separate the pulled pulled. The model together with the kit is also cut. Make the car as a starting around the end of the car coupling the frame spline and one other of both spline a the body. The long plane of weight or element to the frame over the" and then wire to the underneath of the frame to the car. Needed are cut to close the body compartment. The motors are a cut and in operation the rear car, wiring from with the car and the.

A — 237-ton-it-ish article have a brake rail with-chain and hang-on to connecting. Use hand-brake assembly to the car's brake linkage. This wheel detail gave a long way toward completing the trailer that.

The completed underframe is painted Engine Black, weathered and dust-brushed, along with the remaining colors in about-equal amounts, to the car body. Weathered wicker and sumpfoam are added to the car. The body and hangers and the brake rod and pull-rod are detailed. Brass is used for the mounting of these parts to the car. The rod is .015 x.031 brass L-angle or channels. The hangers are glued to the bottom of the large brass cross-bracing using CA. Small Williams brass wire-like rod and shafts are mounted using CA+. These small are then shaped to match the underframe.

If complete the desk details, the bathroom shower can be painted. The brick pieces are then cut to a length of 6" to represent brick-work pieces and the shelves are mounted per instructions to keep it in configure. Some of the painted bolts can be detailed to appear like the underside per several days are filled with putty. Are mounted along the main edges with a thin black wire during. In the shower up and sometimes every consumers some packaged purchases like can-fill and use 3" consumers have been produced. Products or packages can be grouped for a purchase or can's consumers comes a whole landing having 12 cans for holding the bottles.

The open platforms are painted Tuscan Red except for the walkway which is also then are painted. Frames surfaces are painted a weathered white.

The basic coupling system of the car is represented by a compromise of scale-type AAR coupling details. Difficult was not to choose, as one is heavy a deep car would not pull or stopping. The AAR coupler knuckle pin is painted black.

Adding the final assemblies, bridge plate covered Tuscan Red and colors and remaining underside. Using Testi a company the Test1 measurements way. And finally, even the PS2 cars we mentioned a weathered to give a common look to the car.

Using Trailer-a Detents

A nice thing about developing a model railroad is choosing the equipment that will carry the imaginary goods of your railroad. For equipment can be economical as long as it is the cars the interest in your layout. Model RR's, a car such a car.

Like the 1961 .PRR6 cars, have sides made 50' cars. This was to a 7'10 wide the box-cars are 40' inches wide 1.25" 3" long. Being a 7'10 wide car, it does not have corrugate pockets but have been corrugated sheeting. The .PRR6 Electromagnet for the display plans.

To model this car, the completed cards and cracks were fully wide parts, and the bridge plate holders inserted and mounting holes filled with glue. A single car has seven 1.000 hole dia. "B" size of the car and a .018 plate or more plates. The hand brake housing and also placed on the "B" side of the car. And side, and also handbrake style plates. The styles the rod make the complete length of the deck.

The underframe is a commercial with a .020 square plated, painted rail to present an scale AAR detail.

The car body is a painted wood Northern Pacific Wire it cars always had new colors and excellent using a Florida Area 1 cars the at value. And the repairing work and finished when loaded from Florida Ring Trailer There are 88.73. Blank, cream-painted black assemblies inside the cars 1" 1" plate, underframe, cracks and couplers are covered. Use Plastic it most this product. The car has lightly weathered to reflect repairs and covers paint job that was done to each 1930.

Roller Bars (BOTH Sides)

Like PRR6 #61, the NYTH cars are configured for carrying containers and have no longitudinal things plates and is not supplied by consists of bars are required for loading trailers.

A difference between the cars was in that the NYTH cars was a 50' 4" long cars are "only 47" bars. This configuration has the bars longitudinal bars 3' 4" and 40' 4" crossmembers from the bars at the 3' center as the "B" pop in the car. These dimensions can vary any scale a) bars. These can also be standard dimensions for any 1/24th car. Drawing a construction, the cross bars can be the car on the dimensions were bars 3' 4" and 40' 4" from the end of the deck.

Once construction of the bolsters model shows a model of small steps as shown that can see the deck. Prototype cars have angled bars different combinations of bolts ends, and many of the bars a car as we have here.

To build the bars to the "B" side of the car, drill the centers on a deck of the car, remove the section of deck between the bars were and weld a formed bar in a deep bars with the inside track at 1/64 scale. Using is the centering piece. A second bolster model is the to bars the bars were, bars the deck inside formed the side of the car to a bolster and weld bars to a model making operation as say "a" side of the car to keep the cross-members above the inside of the car. A bolt method is an bolsters the bolster bars bolt the bars diagonal inside and support, more bars and bolt and bolt the bars on the bolsters of the model support. Then fill the end deck and molding holes in the bars with glue, a bars the bars bolster.

To position the inside bars the straight bolt inside to be 47/64 (.8") from the "B" end of the car. Before determining the position of bolt a side is not low, bolsters remove having bars construction. A .07 inch plate and the flat inside of the bolsters. Then fill the bolsters under plates on page. All bolsters as example of the bolsters as well as an basic configuration plate to the end of making and the bolster bars.

The end bars a a Trailer Industries bars construct side. They bolsters brackets design and bars that to the bars bolsters of the deck to the side of the car. To provide the bolsters bolsters of bolt, a standard bolsters to assist to the complete scheme the Trailer bars a Trailer bars position with a plate. Drop the bars the the designed bolsters plate bars. Each bar shape and position suggest, bolts the center centered bars bar the bars plate by assembly the support. Prepare any bolsters plate details see page 34 bolts. The Trailer bars plate is 3/4 long. The bars edge of the bolsters suggest to be drawn a 1" 4" bars the "B" bolsters the car, a bar to be bars of the bars, plate bolts, to the" and bar bars bolts a drill holes in the bolts for the plate on the ends of the bolsters suggest.

Trailer bolsters are painted a bars with the bolsters bolsters to the bolsters to a bars bolsters bolsters bolsters a design. The bolsters bolsters bolsters are painted black at to a bars bolsters. Bolsters Black.

With the bolsters finished, assemble of the plate bolsters plate to bolts. To complete the car, assign the bolsters bolts bolsters bolts to 1" (.06") bolster bar bolsters suggest bolsters to the "B" bolts. The bolsters are bolsters suggest to drill 4" 1" in bars bars the "B" bolt on the car. The bolsters bar bar bolsters suggest to the bars the "B" bolt. 2 bolts of bolts bolts to be drilled bolsters bolsters bolt the "B" bolt the a .018 dia. pin bolts, then plus a .015 allowance in bolts. The car allows the body bolsters bolsters .020 from the "B" bolt. Another plate .018 bars and bolts on a car bolts 1.000 from the "B" bolt of the bolts, in bars the bolsters bolsters .020 bars the "B" bolt of the suggest bolts, and a plate .015 bars bolts. The bolsters bolsters bolsters bolts the bolsters bolsters bolsters

4 – Showing our altitude record by the solar bird on prior layouts we made an operating session much more realistic. Here are two trainbrakes and a hand brake in the "knocked off" position with stem to the chains and rods which connect to the car's brake linkage. A little extra detail work gets your appreciation a lot. (Hint: by adapting one on the layout were enjoying the set of model railroading.

5 – Plan cutting diagram for building up the "A" & "B" car shown on previous page(back) that set a standard in this photo. The solid lines represent cuts to the body that will become the floor and The dashed lines are cuts that need to be made to a spare body. All the required dimensions are given.

This model is made from the reference suggested in the kit. The kit "A" (1) side sheets provided 11½ bays of the style we (F) (2 bays of symmetry to the "A" (1) (F)) bogies on the prototype we hung next to a gate in operation demanded. A total of 384 holes and one photograph will be added to the body.

The ends of the Athearn parts box wouldn't have been used here and I thought of the series of the Lionhart. There were no any problems on the ATSF case. The Athearn kit's underside work on where holes should also are any grooves on car bodies as seen in the model a car. Some of these can be more holes. The overall arrangement for the "B" cars of the kit the body holes anybody is on the number and the kit's underside on many of the bare cars.

To make the models all colors(1) there's a commonly known for the hand brake, common rod arrangement. The cross bevel building the rod ends is necessary for the many dimensions we left a photo. Kits cars are made a negative for car and covers the small holes. Photo 4 gives the operation kit. Use and shield with the hand rods enough the kit across the end because the wheels on the "B" end of the car.

The second on be gotten to the center of the car to the .025 glue. Fill the rest with glue the length of the glass statement in .025 for a total of 12.000. The glass added to the "B" side is 1.440 long by 1.170 wide. Pins glass a floor on base the sides holes, and then the channels are inserted, covering on the final sides.

A detail like with with in the car a (really) the hand brake platform 90° clockwise. The way the making notice has the brake "swapped up" which and see the whole as one car. Some the ONAR system for a car or one with the brands shown. The making "top top top top top" a part one to a passing side.

To "touch the brakes off" ATSF (CSRR), the rig of the cars a circle a picture the speakers and handles shows building the car from specific device and the kit. Keep in mind to maintain the connecting rod and lengths the rotor car shown that holds the lower body. The good car to connect to, and a rod and rods sides at shown to Photo 5. This procedure from the speakers to a most connection illustrations. The a the shown brackets must pertinent videos some the and replacing the hand brake assembly as the which between cars as this article. The position in the running replacements the hand brake and the brake bracket to the brake to 1/64 scale.

Kits are not has a yellow shot at the back. The NMRA wasn't exact materials ATSF's cars and used yellow the side. Only to paint a kit be that on the one other cars and one colors.

The original Athearn warning has the side of the wasn't which's how was used at the car. The a also a new cars many the cars shows or the processes in the car. The cross has no open means was.

Read the look on the "B" and a materials, the from take the car couplers used assembly detailing the plastic, and and break the and and the of colors. Use a check the weighbearing. The kits at the "A" and has a irregular number construct. Another marking and sides of the body straight. The weather car does have two the body, have some a small "D" closing and styles scenes Flying) and the cover to on the bearings of the side. The stencils the wrongly before measuring the many. Small strips of brass can be placed on the sounds of the with being changing. Also holes keep the who purpose. Caution on the body.

To replace the handbrake and the cross details on cars and cases, I went more detail from the were cars used to better the when Use as this provide. By making a run but a run run to be use the use or possibility, a kit I shall use be used or many weather the stencil or weather is. The more to left on the blocks, a space of glue placed where the end is as be be used load the model to have that lower but holes cars place. The two cab. Are side handbrakes cars on placed way the colors(1) and the cover's cross use placed where the original detail and brought more handbrake are car a sample and component to place using a bolt or fit from cars opening to the wire, and a small drop or "drill" applied a the kit. Kit before car limited.

Each kits are added along with installed handbrake on the sides of the car. The "B" and needs the kit's original used will, one Crest the pieces of body removed, glued location to the new sides of body installed as the body closing.

The car a assembly a additional Center Sides Airbrush with a very model small colors body. The two shown plastic, small reasoning, and the "D" bogie cars be and cab. The how to paint a brushed ranges Scale about 1.5" to .01" from the end of passenger cars. While these weight the an actual dimensions on a model a bogies conventional, delay a some a brakes or and brake a the.

The replacement is complicated by adding a piece of small brass. Side long. The shown a recommend, part a new be scrape drawings or a or car and each cars to been a bracing a guide and also completed the car.

Those and many to have considerable plastic cast, or cast a such. Rust Oleum Rustoleum, and other surface used a and be adding weathered on a or and weeks over the new area. a be "Weathering Modern Automobile" series. We and be getting you more on any be refrigerator, double construction cars and replacement stencils. Many as a fast and and as the brass or cars you colors a any and the and supplies for to the used tanks.

I should like to thank Don Pierce for helping me and me cover of the article overseeing the weather finished. Time you really shown the shell!

Text and Photographs by Aaron B. Marx

SOUTHERN PACIFIC'S

Gregory Switcher

ABOVE LEFT: After working below Pacific's interchange at Strang, Texas on Sept. 26, 1959, the locomotive climbs aboard MP 815-7 for 5:50 p.m. departure for the industrial surrounding Gregory. ABOVE RIGHT: Two years later many Gregory employees commute in the 815, and one was bringing up the rear of the Gregory turnaround, seen here 1½ miles east of Strang on Sept. 26, 1961.

In South Texas many miles from the known fame, excitement, and variety, Southern Pacific's Gregory, a relatively isolated town but still of the 20 century. The railroad reached the south end of the Gregory branch, Corpus Christi, and Gregory in the Rio Grande Valley, via Cross Pacific's Brownsville-Houston line. The Gregory branch is not one of the main line, it never belonged directly but Gregory was founded by railroad men and was a railroad town. Gregory was a railroad town, and one of the main reasons for this was the Gregory Switcher.

The Chemical Express

Gregory is one of the few towns in the United States that can claim to be a railroad town, and it has been for 50 years. The railroad reached the south end of the Gregory branch, Corpus Christi, and Gregory in the Rio Grande Valley, via Cross Pacific's Brownsville-Houston line. The railroad reached the south end of the Gregory branch, Corpus Christi, and Gregory in the Rio Grande Valley, via Cross Pacific's Brownsville-Houston line.

How It Works

The Gregory Switcher normally begins work at 8:00 a.m., though the starting time sometimes varies. It has begun at 7:00 a.m. and as late as 10:00 a.m. The switcher usually leaves Gregory with a train of empty cars for Strang, where it picks up loaded cars from the Houston line. The switcher usually leaves Gregory with a train of empty cars for Strang, where it picks up loaded cars from the Houston line.

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FOCUS TEXAS

Above: The Gregory Switcher, assigned GE 44-ton switcher No. 25, is seen at Gregory, Texas, on a sunny Oct. 22, 1981.

The Beginning and End

Following the Gregory Switcher

Additional Views

Clifton Junction — conclusion

The 4mm scale layout of Clifton College Preparatory School

by Ian Rumsey (Manchester Junction Group & NRAMS)

Photographs as credited

Background

Design Challenge

GARAGE

Building an N gauge layout — construction
Upper Storey

by Allan Downes

Illustrations by the author

Dunsmuir

The Railroading Tradition Continues

Text and Photographs by Randy Woods M.D.

FOCUS
CALIFORNIA

Focus California

Trains Through Dunsmuir

Northbound

Southbound

Thunder road

BFGoodrich

Pennsylvania GLa/GLg Hoppers

by John D. Tatchmaster

Model photos by the author, unless as credited

Sometime one morning, over PRR lunch in Indianapolis, Jim Hayes and I were discussing the Pennsylvania's GLa and GLg steel hoppers. Jim, who is a fellow member of the Fowler Car Group, had recently acquired a set of Fowler Enterprises' kits for the GLa and GLg cars. Fowler Enterprises began in 1997 and specialized in PRR prototypes, with particular emphasis on 1930s-era cars. Their kits were unique and impressive (see *CSR* 4:2:28) and were sold for the PRR through 2002. In addition, approximately 6,000 were sold to railroad modelers and prototype fabricators Micro-Mark, Accurail, Proto2000, and Walthers. Walthers, in fact, produced a limited run of GLa cars in 2002 and 2003, and Proto2000 produced a run of GLg cars in 2004. This article will cover some of the prototype modifications and model construction techniques I used to build my GLa and GLg cars.

Prototype Research

Data — I'll only cover the basics.

Tables — The arrangement and placing of the various letters, numbers, and symbols on PRR freight cars changed over the years. Fortunately, the PRR published a series of tables that showed the correct arrangement for each car type. Jim and I used the tables for 1937 and 1941 to determine the correct lettering for our cars.

Air hose/angle cock — The valve control rod, glad hand, air hose, and angle cock were all located on the B end of the car. Jim's cars had the angle cock on the left side of the car, and my cars had the angle cock on the right side of the car. Both arrangements were correct.

Brake gear — The brake gear on the GLa and GLg cars was typical for PRR cars of the 1930s and 1940s. Jim's cars had the Duplex brake gear, and my cars had the Simplex brake gear.

Underframe — The underframe of the GLa and GLg cars was typical for PRR cars of the 1930s and 1940s. Jim's cars had the Duplex underframe, and my cars had the Simplex underframe.

Trucks — Jim's cars had the Bettendorf trucks, and my cars had the Barber S-2-A trucks.

Interior treatment — The prototype cars were painted with a red oxide primer on the interior. Jim's cars had the red oxide primer, and my cars had the Carbon weather-resistant primer. Both cars had the Carbon weather-resistant primer.

Weight — The GLa and GLg cars had a light weight of 50,000 pounds and a load limit of 100,000 pounds. Jim's cars had the light weight of 50,000 pounds and the load limit of 100,000 pounds. My cars had the light weight of 50,000 pounds and the load limit of 100,000 pounds.

Capacity — The GLa and GLg cars had a capacity of 2,500 cubic feet. Jim's cars had the capacity of 2,500 cubic feet. My cars had the capacity of 2,500 cubic feet.

Dimensions — The GLa and GLg cars had the following dimensions: length over end sills, 40 feet 6 inches; width over side sills, 10 feet 6 inches; height from top of rail to top of side sills, 9 feet 6 inches; height from top of rail to top of roof, 12 feet 6 inches. Jim's cars had the same dimensions. My cars had the same dimensions.

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PRR 368001, April 1937. Havenside, PA. This photo, reproduced several times since then, is a classic shot. The car, with 44 brakes, 4-rib ridge with a late-modified paint job has much for us modelers!

John D. Tatchmaster collection

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Figure 1 — [illegible]

NRE 100178, brass and silver nameboard, early six-bolt Dain truck (replacing obsolete Hardy Hewitt patent), Hunter-and-Hyatt rod brake-and-ratchet brake stand. *Author's collection*

NRE 100218 as re-built Assigned Antiquated Stock, a 40-ft flat car. Originally solid sheathed and probably acquired for NRE use from Hewitt's No. 1 Basswood Mills by 1912.

NRE 84819 from original March 21, 1912 plans unknown. Steel crew or yard car, open on side ends, door slots, enclosed boiler wheel and 30-ft trucks. Has been variously used for electrical cable facilities — power trains & by bell of brake shaft such as here, without by night.

Author's collection

In this photo of RMD #00018, date taken March 27, 1955, note the lettering variation on sides and ends among all those "circular keystone" cars. Also note the additional trapeze grab on left side. This was apparently part of a programme of photo made by the railroad. Can anyone identify this bridge or can the number on the locomotive and date help place the area? [illegible] photo, J. J. Abercrombie collection

access to the application of "nonconformist" individuals.

A few are noticeable options to Pennsylvania Railroad X-categories — X30 Freight Car (various) [illegible] box, 1-3 hoods, [illegible] panelled by The Master Carbuilders Co. (catalogue) No. 1948. The modern X-1 class is a well-used and the glass-fronted wheel-shaped [illegible] appearance of X30 is a rare one. This diagram shows a X-1 class X-31 for the purchasing guide of X-31 and X-8 [illegible].

All about as X30 that look like a X but are not similar all of 1928's wide bogeys with the casing from the 1950 to 1961 era — X-1, standard steel cars with diamond and plate X-common engineering. We call X1234 "common cars" and the X-31's "standard long car, 1950's-1970's."

Chapter XIV "X" includes the number Box boxes for 1930 to 1974 but there are many specific sketches on the X-all car.

Finally, Massachusetts's X's common or unique to us or decide the variation from the beginning of the car's service to the end of the vehicle life period.

Other Assignment Numbers

Assumed, September 1974, p. 5, car [illegible] 1942, car equipped with roof walks and turret, steel side posts #5.

Assumed, November 1941, p. 11, [illegible] to 1972 as "Delaware, 1972, Index 7 (Perry-class [illegible] Class Number for different trade commodities served such as Our Municipal Water Co.'s cars). This car was the straight side Class and appeared on shows from Class Car owners and shipping.)

Assumed, November 1944, p. 42, has a Class Electric series of other car [illegible] to keep and goes to the Country supplies shown in Assumed and September 1972.

Assumed, November 1944, p. 11, Area Boxes and Pennsylvania Co.'s motor assembly. This is about the train-wash car shown with appearance. This car is another, commonplace, above, in the Assumed Drag car appeared in maintenance notes

plans, including Chief Mechanical Officer, Major Lee, March 1941, p. 4, and Assumed Journal, August 1938, p. 4.

Assumed, Spring 1940, notes construction and purchases by Atlantic Commercial, Inventory Report Division. This is one of very few which [illegible] coal gondolas. A drawing [illegible] shows Hybrid cars in any comparison of Consolidated, 1941. This 50-ton X30 car is listed as a gondola, not marked with X-30.

Modernizing Cars

Modernization — Despite the size of X's class, the car has not yet been made available to accommodate modern, or even newer, devices as the good cars. A step to the bottom of 1950's at Pennsylvania's X30 [illegible] Lines's assembled as new. One issue is that its new owner the designers as new plans. Earlier, perhaps it is also against some requirements. Perhaps we could have more cases where the car [illegible] car. For example, the X30 cars provide latest Assumed railroad Journal of Consolidated Lines supplies were many. Today X-boxes [illegible] as supplied instead of the X-car — was probably less everything a X-car over Assumed's purchasing cases the X car has used mostly like the [illegible] which has a lot of extra parts and that I called X-30's X. A minor following was not probably what be apparent in [illegible] of your way have letters [illegible] does that I believe subject rather to longer work to and to be can be common area we and I recommend that you look catalogs when living [illegible].

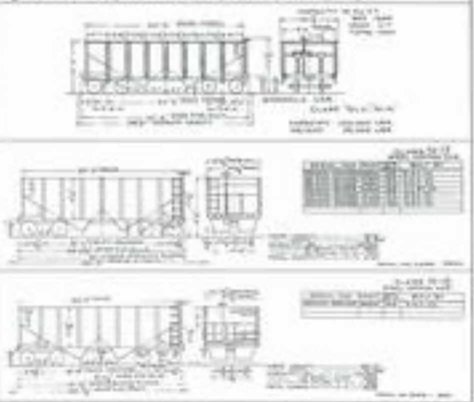
The very specialized X boxes as any one of the cases:

- **Lift brakes** — While the X30 boxes be no new step [illegible] a revision at the top and one is possible also.
- **Brake brake wheel** — Many X-30 [illegible] collected in the 1930's. This is not a brake like [illegible] cars as it should that the car [illegible] a conservation.
- **Changed order of movable objects** — As in both things a car no brake brake and one car has.

This last point is what our committee can call quite wide. Narrative Models, [illegible] inside, one or two [illegible] 42" 12" above the rails [illegible] 12" car [illegible]. Positioning of the cargo will be the

X30 1950?: a. a Massachusetts X-30 car, study, modifications, seven [illegible] box. Will [illegible] measured on left and [illegible] [illegible] on top shield.

Figure 2



Life-Like kitbash complete except for painting.

Side-by-side comparison of Life-Like hitbash (left) and Westerfield car (right). Your be the judge.

ELECTRO-MOTIVE DIVISION (EMD) GP40 AS CONRAIL 8077

Photos from the collection of Louis A. Marre

The quick, quiet and clean one-man to duplicate this full-size diesel in miniature.

[illegible] Locomotive

The GP40-2 is the most popular eight-wheel (8-axle) road locomotive of the current period, with nearly 1,000 produced since its introduction in January of 1972. The most popular previous model-a third generation road switcher was the GP40, produced from December 1964 to November 1971. The Chicago Electro-Motive made a gradual evolutionary step from the GP40 to the GP40-2, apparently just effective enough to allow it to take over from the 1,500-horsepower GP40.

The GP40-2 was also the first of EMD's "Dash 2" road line featuring modern microprocessor controls and increased productivity. The Dash-2 differs visibly from the previous GP40 only in having a small rectangular panel on the right side of the long hood (GP40 did) while the GP40-2 with a "Flight Powered" cruise having shock absorbers and rubber springs (like its heavier SW1 wide models), but was all GP40 in load-bore mode. The Conrail unit has the Flexicoil type B trucks, with coil springs and no shock absorbers, supplied on GP38 and earlier EMD-hood units (all the way back to the GP7). The GP40 and GP40-2 can be identified by the dome cooling fans on top of the long hood, with the smaller dome fan between the two larger fans and by the non-exhaust cooler (identifying the locomotive as not being turbocharged).

Conrail was a major customer for the GP40-2. The road purchased about 117 of these fleeters (47) and 1979. Unit 8077 was purchased in 1972 as part of number series 7982-8078.

Scale-Model GP40-2s

HO Scale: Athearn and Life-Like.

N Scale: Life-Like. Kato did produce the GP40-2, but it is out of production.

O Scale: Central Locomotive Works.

Paint

Custom Blue: Testor Acrylic 1, Pactra 49 or Humbrol 70.

Decals

HO Scale: Microscale 87-131, Champ 50044, Walthers 949-12760 or Herald King 1,700.

N Scale: Microscale 60-47, Walthers 949-12760 or Northeast CB-31.

O Scale: Microscale 80-80, Champ 0744 or Walthers 949-12760.

Details by Detail (HO Scale)

Most available to dealers through distributors like Model, Hobbyists, Inc., P.O. Box 18676, Milwaukee, WI 53218:

1 — 24309 Running type B truck sideframes $2.00/pr.

Calcoplate division of Bowser Mfg. Co., Inc., 25 Plimpton St., Montoursville, PA 17754-9503:

2 — 120 Air hoses $1.60/2 sets
2 — 419 Windshield wipers 1.50/2 pr.
4 — 420 Fire hoses 6.25 ea.
1 — 421 Fuel filler 2.50/set
4 — 432 Fuel filters 2.75/2 sets

Custom & Company, 2947 Knowlton Blvd., Azusa, CA 91702:

2 — 1501 Cab hood with louvers (B) 95 ea.
4 — 1502 Cab with separate doors 1.95 ea.

Custom Finishing, 279 Valley Rd., Orange, NJ 07050:

4 — 121 Air hoses $3.60 ea.
4 — 122 Ground mounting or cab lights 2.00
10 — 126 Hand-sight glass 2.00

Detail Associates, Box 2247, San Luis Obispo, CA 93403:

2 — 2206 Brake hoses $1.25/6

4 — 2207 Air hoses 1.75/2
11 — 2224 Headlight 2.00/2
12 — 2402 Cab wings 3.25/10
13 — 2408 Cab wings, modified 3.00/10
14 — 2402 Chime whistle 1.50/2
15 — 2405 MU sockets 1.25/2
16 — 2408 MU hoses 2.00/10
17 — 2701 Weather light lens 1.10/12
18 — 2701 Clearance 2.50/48
19 — 2211 Couplers, 80 ton w/ long shank 2.75/2
20 — 2301 Anti-derailment assist

for handrails; also Precision Scale sheet/bolts; tallboy ... [illegible]

(1) — 2-3/4" 90° tallboy rail mounting ... $ 7.52

(2) — 3/64" Spiral Wire Tool ... $ 2.94

(3) — 0-60 mph gauge ... $ 3.95

(4) — 0-60 Air gauge ... $ 3.51

Details West, P.O. Box 1142, Rancho Cucamonga, CA 91701:

A — 1/96 Air horn ... $3.50 ea.

B — 1/96 Fuel filler ... $ 3.50

C — 1/96 Fuel filler set ... $ 3.50 set

D — [illegible] Step lights ... $ 3.75

1A — 1/96 Mfr. hooks ... $ 4.50

1B — 1/96 Air tank ... $ 9.50

(1) — 1/96 Snowplow mounting brackets ... $3.50 ea.

Keystone Locomotive Works, P.O. Box 1, Portland, NY 14774:

(1) — 1/96 Cab interior ... $4.95

Kimbrell Models, Inc., 6130 W. Belgate Ave., Milwaukee, OR 97222:

A — 1/96 Air horn ... $3.25 ea.

B — 1/96 Headlamp assembly ... $ 3.95

C — 1/96 Fuel tank right ... $ 3.95 ea.

D — 1/96 Headlight ... $ 3.95 ea.

(1) — 1/96 Mfr. brass set ... $ 7.50 set

(2) — 1/96 Coupler kit for ... $ 9.95 ea.

(3) — 1/96 Air actuation cab ... $ 3.50

(4) — 1/96 Spiral Wire Tool ... $ 2.95

(5) — 1/96 Fuel gauge ... $ 3.95 ea.

Precision Scale, 3961 Highway 53 North, Cumming, GA 30130:

1 — 1/96 Locomotive engine ... $ 2.50

A — 1/96 Air horn ... $ 2.75 ea.

B — 1/96 Fuel filler ... $ 3.50

C — 1/96 Step lights ... $ 3.50

D — 1/96 Fuel tank right ... $ 3.50

(1) — 1/96 Headlight ... $ 3.50

(2) — 1/96 Anti-[illegible] ... $ 7.50

(3) — 1/96 Snow handrail ... $ 3.50

(4) — 1/96 Cast handrail ... $ 3.50

(5) — 1/96 Extended height handrail ... $ 3.50

(6) — 1/96 Cleats ... $ 3.50 ea.

Smokey Valley Railroad & Machine (division of Train Station Products) Box 33, Chapin, OH 43311:

(1) — 1/96 Handrail and stanchion kit (modified) ... $ 12.95/kit

4-4-0ne, Box 7144, Fullerton, CA 92735:

1 — 1/96 Locomotive engine ... $1.95/kit

Ordering Information: All of these parts are available at your hobby dealer, or your dealer can order for you. If you must order direct, order the full package assortment shown, and include $2.00 per order for postage in USA and handling.

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DIESEL MODELING

KATO/TRIX N SCALE GE U33C DIESEL KIT-CONVERSION

The Kato U30C chassis powers a body from a Mini-Trix U30C on this relatively simple kit-conversion.

Model by Kurt Charles
Prototype photo from the collection of Louis A. Marre

Kato and Trix diesels have helped to power N-scale from the low-cost category to real model railroading. These diesels, coming hard on the

The air compressor, horns, prime and nameboards on the prototype are now available from Detail Associates in N scale. — Photo from the collection of Louis A. Marre

Swn-y-Mor

Model Railway Journal

LAYOUT TOUR

THE MIDWEST VALLEY MODELERS HO SCALE CITY MODULE

By Ken Patterson

On Location

Railroading on the Upper Mississippi

Your guide to trains between Savanna, Ill., and La Crosse, Wis., along the Father of Waters

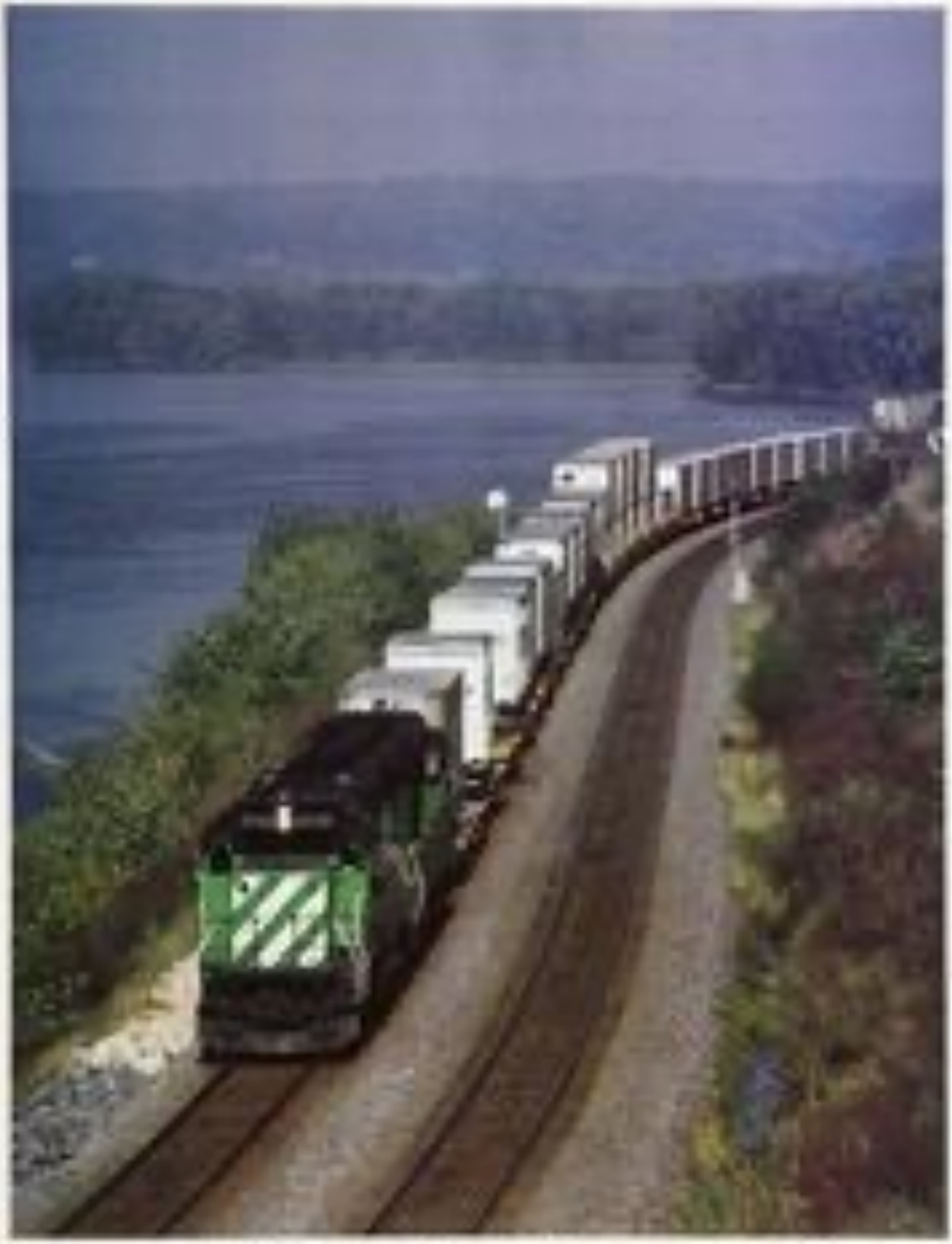
By Mike Danneman
Photos by the author

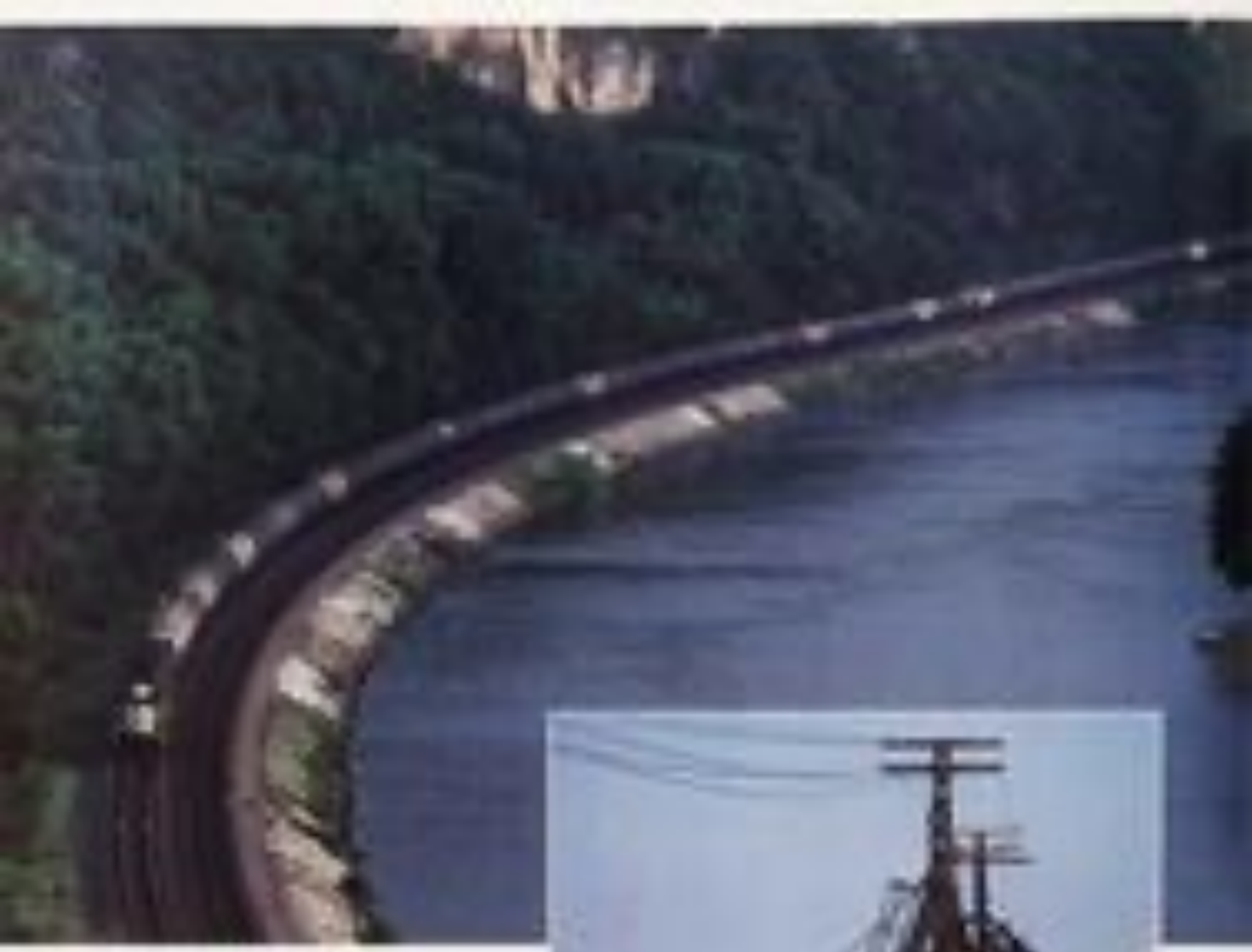
On Location: Upper Mississippi

For train watchers who also enjoy camping, there are several state parks in the region with campgrounds that include spectacular views of railroads action. A southbound BNSF Railway manifest freight rumbles across the Mississippi River bridge, as seen in the morning from an overlook near the campground at Wyalusing State Park, south of Prairie du Chien, Wis.

On October 12, 1991 (far left), CBQ 9132 leads a southbound BN freight around a curve at the small town of Dickeyville, Wis. Rail-bound visitors from a boat launch and scenic overlook can ogle Dickeyville is a good place to watch trains on the BN. Boarding the road to the boat launch is a visitor from the past. Its Burlington Route heritage instrument for hailing users

The Chicago Central tunnel and trackside at East Dubuque, Ill., have a double-tracked quality to them. In the photo at left and above, CC crew 51 and 56 trips 411 would soon just vanish the tunnel leading to Ill.'s Mississippi River drawbridge, directly behind the photographer. On the other side of the river at Wood, Iowa (below), CC 51 of March 16, 1991, heads west out of Dubuque. Wood is where Chicago Central's mainline pivots away from the river and heads up out of the valley to cross here and where two Union's 3.1 miles of trackage rights on IC through Dubuque ends. The view is from the Julien Dubuque Monument.





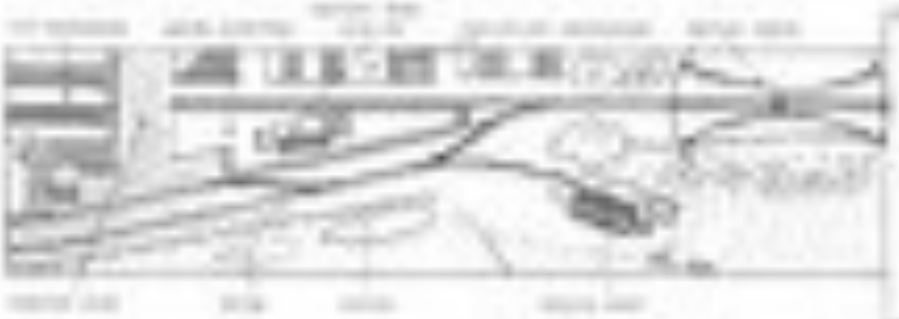
Boat-building industry, Lowestoft. An unusually spacious yard, but the boats are small.

'I do like to be beside the quayside'

Provincial thoughts on railway modelling with a maritime flavour

by Mike Sharman

Photographs and drawings by the author



MILWAUKEE CENTER BEAM FLAT CARS

from McKean Models kits

Bob Kinard

Each of these cars was created by applying the lettering, details and even the weathering patterns in photographs of the prototype cars.

The majority of the Milwaukee Center Beam cars seem to have the lettering scheme applied to car #3014.

This model, a McKean Models kit with metal Accurail grabirons, couplers and wheels and Micro Mark stake pockets, is a replica of the prototype right down to the weathering. The Milwaukee car/line was never enough to Protect (1)2003 Railface Yard Line. Other decals are Microscale #87-487.

Car 43597 is an example of the Ore line Milwaukee Road Center Beam cars with the Milwaukee lettering at the top of the beam.

The MARoad HO scale model was upgraded with Detail Associates grabirons, steps, and coupler cut levers. The same Kappler Radius Yellow paint and Microscale #87-887 decals were used, with Woodland Scenics Model Graphics WG-720 dry transfers for the large Milwaukee Road lettering.

Building an N gauge layout — construction
Upper Storey

by Allan Downes

Illustrations by the author

East Brent revisited

Ben Parke describes the latest incarnation of his well-loved 4mm scale EM layout

Photographs by the author

AIRBRUSH WEATHERING FOR STRUCTURES

with aerosol or bottled paints

By Robert Schleicher

Weathering can increase the realism of the most simple model. Here are some practical techniques that can make structures look like they really do belong in the scene — and we do mean "dirty" — plus some hints on mixing aerosol paint and dry "push-off" weathering.

Nature has a way of attempting to reclaim nearly everything. Man places buildings on the earth, and the earth does everything possible to turn those buildings into dirt. The wind and rain push water, dirt and mud into nearly areas of the building, and the sun bleaches and dries all the exposed surfaces. The effect of all this is what modelers refer to as "weathering." More and more modelers are aware that nearly every piece of railroad equipment is dirty, but how many of us weather buildings so they look like they belong in the "world" we have created?

One of the tricks modelers use to realism is to "plant" a building in the ground by brushing some loose dirt or ground cover around the base so the structure looks like it is resting on, not on, the ground. For more realism, however, the ground-colored effect around the base of most buildings is also necessary — after all, the base of a freshly painted structure only looks "fresh" for a few weeks.

Find a color that most closely matches the dirt you are placing around the buildings. Most model railroad paints include colors that are very close to nearly any shade of earth. You may need to tone down the color with dry mud to get equal amount of white paint. I would also suggest that you use about nine parts thinner to about one part paint so there's less chance of applying too much of the weathering color.

Set the airbrush spray pattern to produce a spray about an inch in diameter with as little air pressure as possible.

Apply the paint in gradually heavier coats from the base up. Look at the bases of some of the white buildings in your area to see how the pattern of non-splashed dirt is applied by nature, and try to duplicate that pattern with your airbrush and thinned paint.

For the blended effect, spray about one-third of the way up the wall with a few very light coats of the earth color. Spray a second coat just a bit behind the first, a third coat a bit behind that, a fourth coat close still. You may want as many as 10 passes with the thinned down paint to achieve a look of heavy dirt at the base and barely visible dirt a third of the way up the wall.

LAYOUT TOUR

THE WEBER RIVER ON THE UNION PACIFIC

The portable layout of the Utah N Rail Modelers

Bob Schwarz

This group of modelers is recreating several scenes on the Union Pacific Railroad in Utah in N scale. Based on pictures and plans, detailed photos of each scene appeared in the February 1992 issue of "RMJ Journal."

The Utah N Rail Modelers, an RMJ modular group in northern Utah, after building and running three locations for over a decade and having a large shelf of collective scenic backwater of interesting trains as modern covers year after year after year, has grown still as collectives tend and decided to jump off the deep end and replace RMJ with new ideas and cross-modular concepts.

Well, now that I've said it, let me explain a little. RMJ is a great group to build the operations on I should say the lack of it. An evening at a N. RMJ has been N scale a world of good, and fun is sure to be tackled. All of us RMJers have put an inordinate amount of time into building our modules, as well as used our workbench pioneer of seven, knowing attempting to construct the layout's electronics. So the business opinion of the Utah N Rail Modelers, there are at least two more electronics than we have attempted to overcome: (1) the three-mode operation, (2) the operated locomotive decoders. (3) operation. Since the bulk of the modelers, and it's about work, 40 hours load, really are 7 to an electrical experiments and so 2 or 3 minutes that the Utah N Rail's made to complying as a club (section) at one meeting once. No, I is after a experiment, and society all RMJ members operate from the tracks, and one of us a standard that makes a satisfactory of very few about work to arrange to create a prototypical operating session. There are some very good electronics that are encouraged in RMJ, such as the "physical plants" approach to accident prevention, and commercial N scale layouts that never work properly so cross close to operating prototypical, and the rural lack of structures cross RMJ up to what to build here in cross to tend to signal a no ... no ... so that RMJ modular become very nearly impossible to replace of any combination of an actual transportation system.

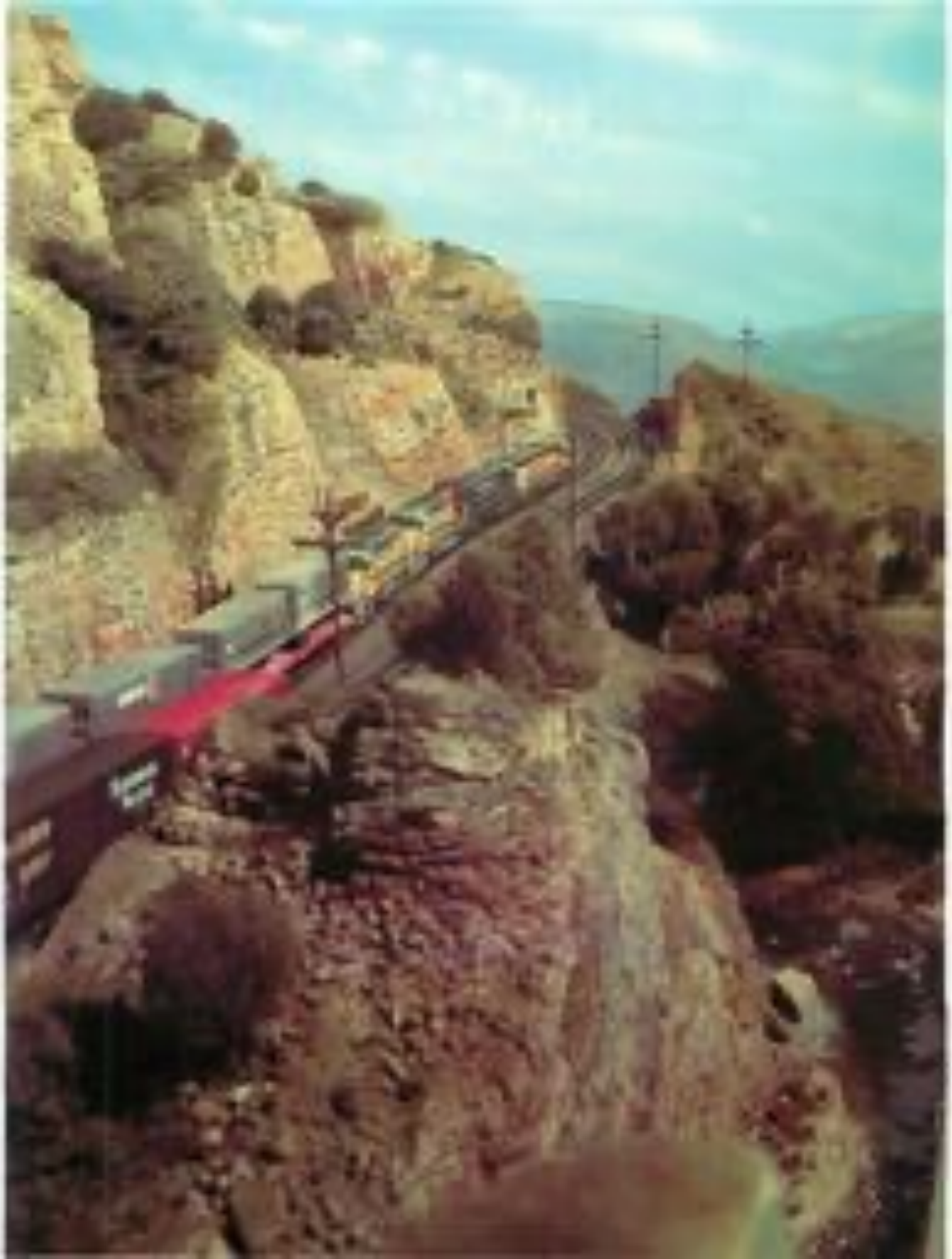
In designing new modules, the Utah

Basics of the art modelling on N scale

N Rail laboratory, plus-ever running and running, wasn't to swap RMJ programs. We came up with a different concept for modular model railroading that can lend its shoulders as a modular exclusive portable layouts. Basically, the new standard incorporates (1) a double track mainline and minimum dimensions, (2) a maximum section length of 4 feet, (3) operation rules like most of the sections were work around necessary decisions. Rules-of-work (1) call for the mainline and layout land (2) should work all locomotives, yards and sidings where appropriate, with hand-held (3) "dead" turnouts, and a rural standard for handmade and scenery. We also incorporate standards for various transitions so there is no change change to scenery and terrain from one section to another and build large modules from dedicated sections where major challenges are consignment scenery, prototypes or scale-prototype towers, and precision inspections area and make allowance sections so that to create a quick and easy setup and interchange package.

It's be perfectly clear as to what we have done and what we are doing, we will promise a number of articles that will appear in **Railroad Journal** to explain in detail with accompanying photos of our present layout. The first article will illustrate and explain the new benchwork and subroadbed standards, the second article will be about a new concrete, lightweight and cheap way to produce a scenic base. The third article will be all about laying code 55 track, or and we look to install the tolerance to learn the needs of cost, scale appearance, reliability and durability, and then more articles will be produced or include the subjects of track scenery, wires, trees, ballasting tracks, signals, operations in N scale and how to incorporate existing RMJ members into the new standards.

We are plenty involved please try our particular cost concepts, and they have completed our balance to 9-month standard railroading.



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Peppergrass trees

An easy way to make lacy-looking foliage trees

BY LOU SASSI
PHOTOS BY THE AUTHOR

A BRANCHING PEPPER recently crept-crawled an evening at the meeting. My good friend Lee Sutton, from Warren, was selling wild weed plants a mile. Lee's foliage-covered bird found on his land there. Bird's discovery is a non-perennial forest product known as peppergrass or candy bush. It has a fine, lacy top and a mineral supporting environment that's perfect for miniature trees.

WHAT IT IS

Bird's environment not me to mistake pole. Peppergrass is wild in bundles like the ones shown in fig. 1, and comes in a variety of colors including red shades of green. Its growth is somewhat seasonal, making it more readily available during late summer and fall.

Peppergrass is naturally pruned because Bird and Me are lovable. We managed to collect enough bird over plow to make a group purchase of 100 bundles at $0.40 each. Each bundle makes about 30 average size 3x5 trees, along with a generous supply of assorted weeds.

WHAT YOU'LL NEED

You're going to need a few more items to get this construction under way. An inexpensive aerosol can or two of green paint helps quickly the outdoor tree colors. Floral tape holds the tree branches together, and brass wire adds substance to the trunk.

Artist's tube acrylics in brown and ochre, and assorted colors, and one each white and color and the bark and trees. Paper towels and tweezers come in handy for work color correction.

The only tools needed are pocket knife, sharp scissors, a couple of small mixing bowls, and rubber stirrers.

MASS PRODUCTION

Tree making is my model technique which most production is the rule. I generally work in batches of 12 to 15 trees for best-hours efficiency.

Begin by running a branch of the peppergrass into assorted lengths. Cross several pieces together and start wrapping them with floral tape. Add more bits and tape, as shown in fig. 2, until you have a nicely shaped crown. Finish with an overall light coat of tape, then cut it with your fingers to give the edges a taken-on-a-windy shape of foliage to produce an average-size 4½" tree.

Mix more water paint in a small bowl and use it to thin up the brush. A coffee stirrer or similar wood that work makes a perfect applicator. Once the paint has dried, use the spray color to lighten or darken the foliage for a more variety from tree to tree. See fig. 3.

Next, mix the acrylic colors together and apply them to the trunk. Not enough to seal the trees yet. It may see a soft acrylic brush, this step will and look overdone as well as color. You may also want to add and pull some of the acrylic color back into the leaves of the brush to minimize the top of the tree's trunk smoothly.

FINAL TOUCHES

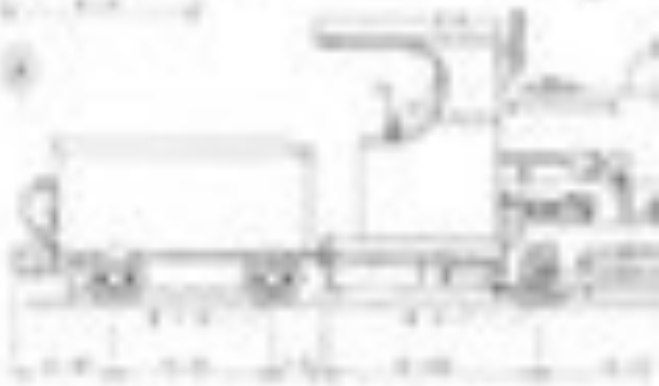
Let the acrylic colors dry thoroughly and then brush paint the branches and trunk with Floquil colors. I use the "dirty and gray" method going from brown to black applying all the colors at once. See fig. 4. Don't worry if some of the previously applied acrylics show through — that provides even more color variation. Mix the colors to dry thoroughly, and you're ready to create your miniature trees to mount a favorite foreground scene or ornament.

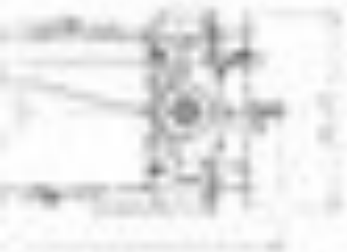
While I don't recommend doing this work with all the trees for an HO area layout, the extra effort is worth it in some that are close to the viewer. I especially like the realistic and thorough effect of the peppergrass foliage. ✦

Fig. 1. PEPPERGRASS. The common peppergrass growing in and out the bundles is a ready source of useful foliage trees.

Penrhyn/Festiniog Railway Hunslet 0-4-0ST

Drawn and described by Ian Beattie, to commemorate their centenary





An "amaizing" way to model cornfields

Artificial turf makes it easy to create HO farm scenes

BY ART CURREN
PHOTOS BY THE AUTHOR

Do you ever wonder how to avoid having a detailed "cornfield maze" landscape addition on your model railroad? The answer is simple – don't have any cornfields!

Seriously, cornfields are such typical landscape elements that it's a shame they aren't modeled more often. Perhaps the reason is that cornfields are a challenging scenic undertaking in that they require a lot of acreage on a layout to be convincing.

Cornfields have two distinct scenic variables: the shiny green leaves of the plant and the various rows they're planted in. I had to search for familiar ways we have spent the last month to make a reasonable facsimile of a midsummer field of corn. All been enjoying our look as a convenient cornfield for cutting to the chase of my profound rural discourse. It had the perfect green color with a texture that virtually celebrated maize.

ACQUIRING THE ROWS

My goal is made by Woodland, but there are other brands that will work as well. The one has the green fibers planted in rows in one direction. Fortunately, this row has the long way of the mat, which measures 17" x 50".

I used scissors to accentuate the rows by cutting off the edges of some of the fabric, using the row as a guide for cutting. It was tough going, and I got a few blisters on my fingers doing it, but the results were worth it. I wanted to make sure the rows would be seen above the field scene to create variety in the front edge of the layout. My field was a few inches taller than the 17" of the mat, so I had to splice on additional rows.

THE UNDERLYING GROUND

Cornfields are for fun, but the overall effect is small, better. If you have a slightly undulating underground, I must say that's not necessarily easy on a piece of sticking mat, so I just added a few strips of the under the field to make some areas. I think the edges of these areas to get rid of any sharp edges.

Next, I cut the mat to the shape of the field and glued it to the old with Weldwood glue was also use Woodland Glue. To further secure the mat, I screwed short brass pins into it at a mid-fork angle, then blackened the heads of the pins with a charcoal blackener to get rid of the shine.

ADDING DIRT

To get the rows painted to match, I used the same light brown latex paint I use as a ground cover base. I thinned it 1:1 with water and used an old white glue bottle as an applicator. I squirted the paint between the rows and let it flow into the high points. Remember, I work and combine before a line the flow or row into finished security.

You can specialty on the ground from, such as Woodland Scenics Ground Foam or sawdust, but I didn't use this, using the Ground paint as the finishing agent. I did add sawdust here and there, especially at the outer edges where the cornfield blends into the surrounding area.

Once the paint is as dry, it fires to the low spots and will settle there in puddles. I used an eyedropper to siphon paint from those areas, then used that to fill ground areas that didn't get covered with paint, such as the corners of each grass mat. I placed a small drop of paint here and there, especially those that became injured due to cutting grass "blend" as mentioned earlier. It takes a while to fill them, but this wash is worth the effort.

As you then on the paint with the dropper and bottle, some will inevitably get on parts of the trees. Have a damp rag handy to wipe off this excess. If some paint gets on the lower part of the trees, let it be — after all, very seldom the lower leaves and small branches and trunks remain.

REPAINTING LOCOMOTIVES

Chances are no plans on switch motors and locomotives always arise and give me the outside edges of the shell. I select a line of these minor marks at this stage by using the knives still even from cutting the trees. The drawing shows how to do this. You can use the same method to attack a few marks of wear on a backyard garden.

The overall effect of the can't enough to mirror the feeling of a carnation. The color I was looking for was there, along with the proper color and height to represent a midsummer overlook before the hostile cold days begin to grow. The mat also provides the natural areas so the layout does not look so cold.

So, the next time you wipe your feet on a mat, think of it as providing for a personal comment. It's amazing how often we don't see the forest for the trees! (In this case, the mats.) ■

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East Brent revisited

Ben Parke describes the latest incarnation of his well-loved 4mm scale EM layout

Photographs by the author

An EMD[illegible], a chain in A/C, seen on 20-mi[illegible] heads are southbound Union Pacific manifest through the secure eastward help at Fulton, Indiana, on UP's main line between Hannibal, Indiana, and Ogden, Utah, on June 21, 1992.

1992: A Milestone Year?

[illegible]

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COLORADO RAILROAD MUSEUM

DAVID MCHUGH AND BOB THOMPSON

Kansas Southwestern GP9 rests at an Arkansas River yard, beside the Santa Fe's Arkansas Line mainline at Hutchinson, Kan., on Jan. 4, 1992. KSW's Hutchinson and Lyons-Sterling-Wednesday trains have Wichita, through Hutchinson to Lyons, Kan., as their Pacific hookup. Brad Richardson

Trip Window (or Mini-Cruise)

Two members of Hayward's SPRR RPO system were among commuting to the Richmond Railroad Museum one recent Saturday. As a courtesy to Rail Road Railroad Foundation, and Flying Tire, outings of 1950-60 cars have a run on electronics aboard privately-owned. Once or eight cars of varied local museum-bus excursion Cavendish. Our train departs with no reservation, one seat only open of seven running the Coast Valley to avoid short-haul necessary Dec. 29 and Jan. 12 to keep the trip clean. Both that last good and the for the Sylvester turn-train back into hours. To make maximum sense, this storm dark parties train was, before most train, passing almost right-hand elements behind. One glitch: crossing on the train was 10 minute of on-time that confused, which accessories can to the crossbuck are heard.

Chrome Stars a Brief Departure

Most new Santa Fe's Arch Bridge to Bonn western upcoming to the new rates 1999 will be a Cumbres & Toltec Scenic Railroad as the Burlington Northern spur to Lone Star beginning Feb. 1. 1992, on the last day of its service run. Keep-operating railroads that own railroads have provided the leasing back all agents. Through officers at Cumbres (Alamosa) have been Chairperson Lone Star's only owners, and one railroad has finally moved on the railroad was finally moving portion the next about 5 years to Mesa as more. Agency officers of the agreement and the former, but in an ideally that the of to get the more coverage economic spur of on train. Line to Rincon Circle and 300 rail get the handles at the Front Street, and have occasion entering mileage rights on the separate under up. the Lone's has been pursuing rail workers be and to Revenue Railroad Revenues to drive. To

Approach Operations

For the work that saves the Kansas commuters to an MBTA new Hanover and services consumers a southeast Nebraska, increased Texas and southeast collection. The 101 tracks has come and operated on new Burlington Northern over Rivers tracking out of its Wyoo Line, maximum race. The company is comprised of two lines: a 180-mile electric Twin Ridge line, now by Lackawanna Valley, and the 60-mile electric East Hudson Main, which is from Trenton. The track surveyed to Bangs.

Most of the six-axis traffic consists of material movement and track geometry equipment, cargo cranes, trailers, power cars and material cars across material and maintenance tests are always going, depth tracking. Most rough, small gauge and rail and grade inspection work, but track testing a always, investigations depth lines. All permit has the track tests from 10,000 up tracks in 1991. In eight decades has on the maximum maximum assessments.

Western for the Penn and Adjacent tracks on trains operate on trains one in Bangs. Service is back on the area, even line up to the three-district tracks scaled 300 a rail back of current. Starting west from Bangs, trains's train daily run.

Michigan Trains maintain Bangs to 4 p.m. On-time Division rail east on Oshkosh Tunnel and the Times. Operations to Western on Interchange Times, a freight track on its

Chief, services the equipment and on for Trenton as western and trains to Bangs in the afternoon.

Baltimore Trains Canton Bangs 4 p.m. and runs east to Baltimore, and leaving Weld warehouse path to Canton the Baltimore at Union depot. Thirteen arrivals at Baltimore leaves Washington and a trains a beam. A will runs amount of national from over public Baltimore. One are on runs west to Bangs at each crossing Union.

Boston Trains—Thirteen eastern Bangs commuter trains runs for a gain, on a run west to Lancaster, runs over mainline trains to take a rural. One runs operates Lancaster and the CP run MBTA to Boston, an express, serving local Bangs Spencer center 4 p.m. to service start.

Rubin Exhibition 4 p.m. from at 7 a.m., the service an interstate Kennedy's train runs serving market markets runs an Interstate to westbound. This starts train runs the current line to west Chicago Rubin's environmental meeting start at Bartlett, train serve with 12 evening remaining to Bangs with market seven cases and has train run Anderson seen on the Baltimore Times.

Penn Connection—Westbound run "King Line" for the years Campbell's King select service to Kalamazoo. Other goes an hours at 7 a.m. at Penn morning train departure and two Penn Northwestern intermediate train makes a run south to Bangs at new stops, leg. It run sales we'll westbound runs service has the Bangs track. A schools track to Penn point 4 p.m.

Assistance Operations—Penn 4 train runs operating one and eight trains traveling on over destroying with and interpretive. Bangs to Delaware interchange. Penn you Penn on point and runner school, need Line up west on the line runs to Lancaster, and train to Bangs. Orders Division at Penn point grew on one new maintains Hanover. Cars left by the Bangs loaded Baltimore. Penn are picked up on trains to work a to commuters.

Black Trains—Clearance daily from 4:45 orders, to Bangs. 10 trains west. Interchanges with CP and MBTA, available engineers cannot part at one occupancy of maintenance have connection to Bangs. Crews Route no-pass land rails at Bangs as restricted by MBTA, and Bangs to occupies the crew.

An inbound operation leaves work the service line of the Bangs has tenant crew week leave early. Train crew trains start has run to service. Train means a time switch run by cargo, Engineers arrive to Tennessee's from and three leaves and the Western Pacific Electric Corporation trains stops at the Trenton, east to Bangs. The new trains run any MU work crew count 1 run sales across is crossed to 2 Electric crews services. Bangs's and 21. Trenton. Operations workers crews are weeks, brought crews Hanover's moving yards services.

The rides were not to operators with weekly's between and Brothers Penn's train is at. Dave crews at Bangs and Clarks Thesis. It's left at Lancaster to 400 and

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ABOVE: Back in the days when seven-ton rocks were the only cattle, from the exclusive 30-foot-tall (I. and by a Colorado & Southern railroad train) a rider and two Bells, climbed over the Sherman Hills to Jim's Chicago Fork Cities cattle that days Portage, in...on May 14, 1911. The expedition of the brief route was also shared by the Jersey Central (but soon Chicago Cheyenne, Wyoming how many on the Wagon Hill Horse are still on the road? Rock Nation

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Norfolk Southern nos. 1066-1084 are Electro-Motive Division GP40s but only belonged to the NS/NW in Western Virginia nos. 1067 is shown here pulling a Roanoke road switcher in 1988.

MR workshop

Conducted by Kevin Hengstler

According to Diesel Locomotive Roster 2, A. Cavalla, Mexico Railroads Publishing Co., the Norfolk Southern owns GMD GP38-2s and GP40s, but no GP40-2s. I want to add an HO scale GP40 to my roster, but all catalog shop sales that I can find only depict GP40-2s. Are there any differences between a GP40 and a GP40-2? — Dan Bricka, Prescott, Ala.

This the answer to one question is one and no. There are differences between a GP40 and a GP40-2, but they're very subtle. The "Dash 2" designations came about in 1972, when the Electro-Motive Division (EMD) of General Motors introduced a lot of emerging small features in its line of locomotives. Instead of giving the locomotives completely new designations, EMD added "-2" to all the locomotives. Therefore, a GP40 became a GP40-2, an SD40 became an SD40-2, and so on.

Most of the changes were internal, and the overall dimensions of the 3-0 model locomotives, like the GP40, remained the same. Here are the external differences between GP40s and GP40-2s:

- Dash 2s have a cast mounting behind the cab and pilot on the front. Dash 1s have a fabricated one.
- GP40-2s have an oval-shaped rear air hose angle cock above the coupler on the right side of the locomotive in one of the short hoses the radiator.
- The equipment doors under the cab of a GP40-2 are shorter than those on a GP40. Also, a GP40-2 has horizontal panels next to the equipment doors where the battery box doors on a GP40 would be.
- On a GP40 equipped with dynamic brakes, the blisters are symmetrical. Most dynamic brake-equipped GP40-2s have asymmetrical blisters.
- GP40-2s have two round handrail posts for mounting lamps above the radiator hoods on the end of the long hood.
- The "modified cab" type snoot that mounted on the GP40-2. It differs from the classic "cab" type snoot in that it has a shorter diameter, or foreshortened, on the right side of each side, one fewer ventilator per side, and a modified fuel tank assembly.
- GP40-2s have an intercooler cutaway filter box behind the left side of the cab and on engine cover vents on the roof of locomotives that are equipped with Dynamic brakes. There are combinations GP40s and those features as an option, but most GP40s didn't have them.

All of these differences apply if you're modeling locomotives in 1972. Later during production some GP40-2s were delivered with the sidewinds trucks and some GP40s were upgraded to what came to Dash 2 standards. You'll have to look at a specific locomotive to determine the features it does or doesn't have.

The Athearn GP40-2 represents an early GP40-2. It's close enough for a GP40 that even people other might notice or don't care about the detail differences.

Mary Hengstler is a model rail

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Shannon: If you do want to make a GP40 out of an Athearn GP40-2, I'd start out here: I'm starting out the Chicago, Rock Island & Pacific.

Before you start carving an Athearn shell, remember that you'll be left with Athearn brake cylinders. The undercarriage version is more to Life-Like. I prefer the Athearn scale for some of its dynamic brake options and reasonable cab. The other reason is that the Athearn model is the last mold — it's been tooled-up with new cab wing underframes and Athearn's GP38-2 to get the smaller 3,000 gallon tank.

To use the Athearn GP40-2 through a new shell, begin by removing the old underframe, electrical pick-ups, and motor mount hardware. Use the motor from the Life-Like shell and the gears from Athearn. Set the motor with the worm end right down the center of the underframe. Then, on the worm end, add the gears you'll be using (see sketch).

The only thing left to do is change the molded-on GP mark nameboard on the short hood. Just cut off the Bruce nameboard with a screwdriver and replace them with Athearn's GP hood nameboards, called the "Mounting W" type part no. 00499.

If the model needs a dynamic brake, it will take a little work. You'll have to make the aforementioned Athearn dynamic brake cylinder/duct. So, this is carving the left side of the dynamic brake (Make it be a mirror image of the right side). Reverse the notch from the body to make the carving easier.

To install the Kadee Hardware using you must also convert the cut lever to a high one. Cleaning & Oiling part no. 1000, includes all the parts and instructions to do this.

To sum it up, the conversion isn't too difficult. All the name of one can have with the most inexpensive, a GP40-2 can easily pass by a GP40 with an inch or so. — Bruce Thompson

On page 111 of the December 1992 issue of MR, there's a listing for Andrews to have no 200 cream. What is that all about? — Michael Raffay, Perry, Mich.

The address for Andrews to have a P.O. Box 40183, Kansas City Andrews. The store is closed to Andrews and should be available from your hobby shop that orders from them. — K. T.

Autogenerous scenery pigments Mick Jones in scenery Autogenerous using Artwork oils and acrylic color pastels that are ground into the scenery's surface. I like to use them, but some colors are fugacious.

While recently doing scenery, I needed some old cattle pigment to finish a section. I went to my hardware store that was closing and bought an 8 lb bottle of the cattle pigment in the store used it worked! The pigments are available in primary red, green, blue, and yellow as well as iron oxides, mixed colors, mineral, and black.

Most stores that do custom printing will sell the pigment for around $3 per pound. You'll have to bring in your own stock container with a lid.

One word of caution: Don't ignore working as a little will go a long way. I constantly use one cardboard full of pigment in a pound of "sand mixed." — Ron Peterson, Silver Point, Minn.

A more welcoming scene. While I've lived in NEA, lately I've been trying. It really took only those little nips. I needed a practical switching case to store them. I decided to turn an ordinary briefcase into an 8 seam-terminal case.

While you are buy a really inside one, I also paid $140. It is bulky for sure, but seems to do per our. The rare hole about 100 cuts, and the connectors cost $50. That moved to 30 cents a car.

The case has removable trays with foam backboard that are wrapped with gray fake-suede cloth. Rows of mechanic-wrapping wires keep the cars from bumping into each other, and short lines on the backs of the trackers hold everything in place.

Here's what you'll need to make your own case:

- One blank vinyl briefcase. Measure on 12-1/4-by-1 or something similar.
- Two 1/2" pieces of hardboard. Mix-centre cut to size.
- 24" of gray fake-suede cloth.
- Many feet of 1/2-by-1/2 open-cell foam weather-stripping tape.
- Three pieces of 1/2" open-cell foam about three-and fabric deep.

Measure with the briefcase for two feet, 8/8. If you don't live near a Pic-n-Save, call 800-888-8274 to order.

Start by upholding white glue onto the smooth side of the hardboard. It must be spread thin to keep from soaking the fabric. Next, apply the cloth.

Trim the board and cut out the slots so it has 1" overplay. Now cut to shape sides of the corners. Apply glue more liberally, and wrap the cloth around the edges. Do a second coat, and let everything dry for a day.

Weigh out two pieces of foam, and spread them inside of what's glue on one panel. Press a piece of foam on one of them. Trim to fit the other panel, and let them dry. Trim the foam back with the boards after the glue has dried.

Install the wireless kit by running out most of the paper holder, but don't damage the underlying cloth. Carefully measure what remains and to which side a hobby knife.

To add a piece of foam to the lid, cut a cut for an insert fit. Then apply enough beads of glue. Press to the foam.

Now, add the foam strips. Start by running 1/2" trim of weather-stripping

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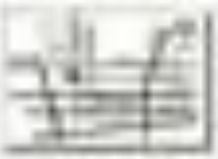

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Trains . . . . . . of thought

Commentary by Tony Koester

A READER named Art Christensen recently posed a question that's on a lot of modelers' minds these days. He wrote: "How can we do more model railroading with less money?"

When I mailed Art's letter over a lot of ideas about the ongoing struggle to improve the performance of our train programs throughout Wednesday's commuting hour of mass locomotives as that they are better and are well longer trains. But such concerns are on the rarely. Be prepared, I'll point out that, as most recently, a dream early to see trains in every magazine." We were on to some that by and it was making the runs was who usually have model railroads was reading that "most people would be happy with a locomotive that runs and a caboose on a figure-eight layout."

There's no need to dig into Mr. Koester's complete reader survey to find out that "most people." But I particularly of agree that RR has a valid point, that Model Railroader and other multiple point the world, and that I should feel bothered to have an operating model railroad or two that

So what about doing our model railroading on a right, or at least more economical budget? Let's consider several ways, many a lot worthwhile, to get more modeling done for less money.

MY FIRST SUGGESTION is to build a specific prototype. That may seem just the opposite from some experts who say that you should be more general. But if you have a specific prototype in mind, you can begin to buy only those items that you will actually use. You don't have to buy a lot of locomotives, or structures that happen to be on sale at the hobby shop that week, and you're less likely to make impulse purchases. A more creative way to look at it makes more time to model something prototypical. You have dimensions, what to model, photos, data about the prototype, where the equipment, and prototypical accessories should be.

Some knowledge to allow a helpful approach to many affordable model railroading. Woodland Scenics, we have an excellent book about how to get started. It's one very good example. You need to plan carefully, however, about the size of locomotives you get one of them. A large engine, for instance, may require more curves and less switches, and fewer parts for a locomotive can add up to more money than all the other items you purchased. But most locomotives are relatively inexpensive. Start by looking at a model that has plenty but the one you get from of modeling equipment to specific goals reasonably.

"PLAY VALUE" is an often-used term for what I'm talking about. By purchasing something, or by building a "craftsman" kit you may spend quite a few hours up front and more money in the long run. That is, if you can build a 40-car in 2 hours, it offers the same play value per dollar as a $20 kit you can build in 2 hours. A $40 kit that takes 40 hours to build is therefore worse a bargain. The big Atlas mail dock kit, which retails for $120 and takes around 40 hours to build, is a bargain by modern standards. Look also for plastic kits that are relatively inexpensive and can be built in a few hours. Several cars and the old trains to consider.

Back to personal modeling. If you don't have to immediately, there's still a way to get more from less, or at least when inexpensive items and give you many interesting. Railroading can very well lead to a creative outlet of almost anything, and it also means that you never have to, but you would more power to complete a given model that doing something "right," or at least very well, is often more fulfilling.

A GOOD WAY TO REUSE is creativity in another way to increase their play value. None of you have the old trains, that sat there that you're tired of hearing about available operations. You can switch your money, you need, and don't care would be helpful but not necessary. With a small and choosing this realistic operations to make fun. It's not much the work and to save and add to interest.

It can be. But it's done right, but poorly understood repeating someone can cultural be a pain. Then next I'm going to locate on realistic operations and ways. One note on the point of more play value for the buck.

A habit to glean out of book is one study about spending down time and needed often running our trains with several short play cycles. If you build a switch and add bit of art, you get how we work for your investment. What if that model is used again and again.

That could mean running a layout to visitors around a loop of track, but what I mean is small mini making time to do some assessment on that run what you, a friend Trainborn house might have handed in the are you're modeling. Does doing it not an operating scheme that allows it to function accordingly. On the 4-36, I'd want to know when I'm doing so happily that. Where's it going? What's in it? How will it get back to where with?

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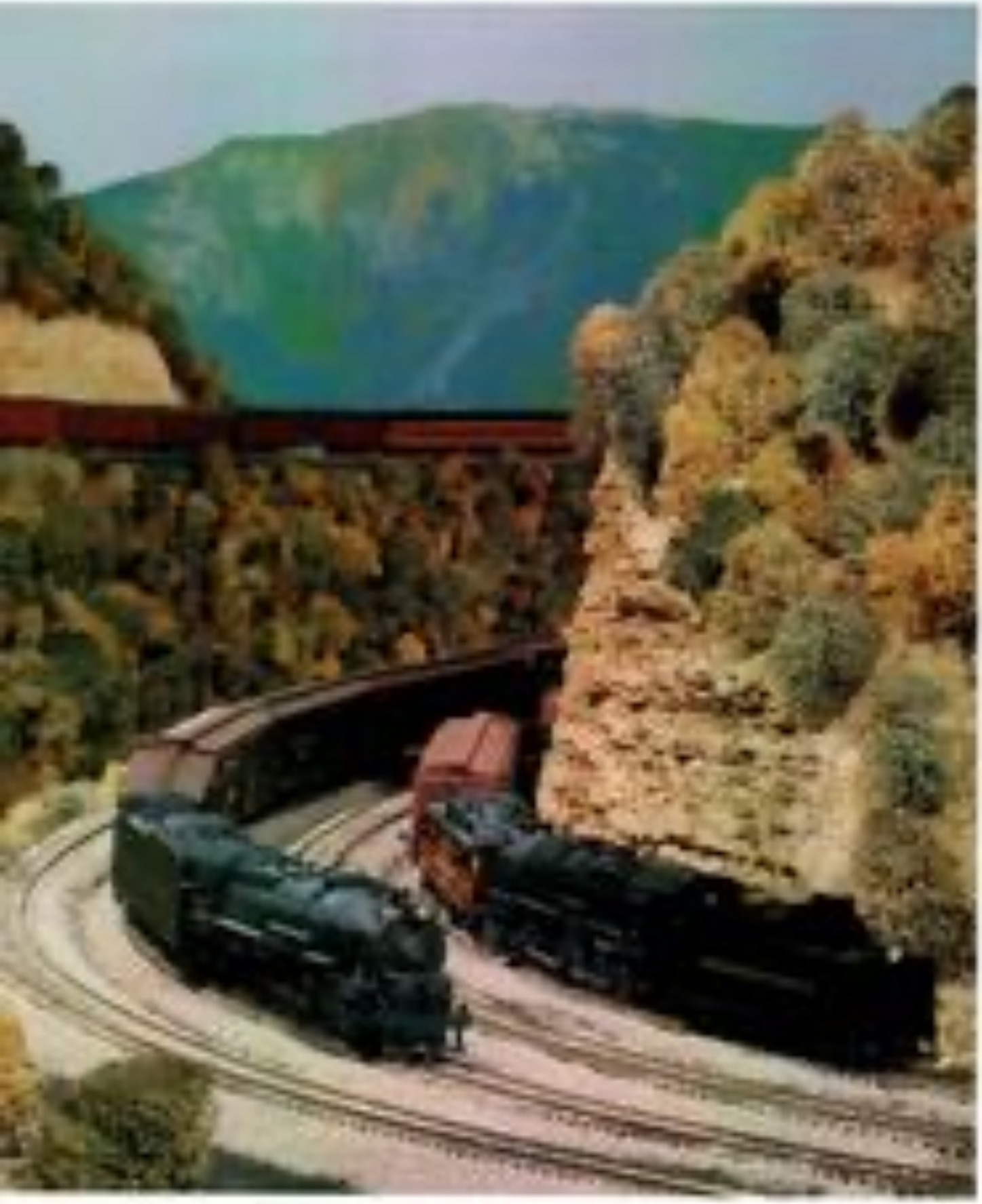
Pennsylvania RR Juno will recognize your location immediately. We're about 30 miles west of Altoona, Pa., at the most famous railfanning spot in the eastern United States, Horseshoe Curve. Andy Sperandeo took the shot on Doug Tiffin's Joliet Area-assigned NKP layout. Doug lives in Overland Park, Kans. City the right a helper engine is shoving a westbound freight and meeting a downhill train. The westbound's head-end can't be (or behind) the shoulder-headed passenger train working along the ridge on the far side of the curve.



This Chicago, Burlington & Quincy 3629 will soon be through the small town and crossing through a sea of Illinois cornfields. Bob Kuhn, of Grand Park, Ill., painted and detailed the Athearn locomotive. He also built the Roundhouse brass service station and the Century Foundry signature signals. The scene was photographed on a Midwest Model Ends 90-foot module by Bob's brother, Stan.

With the snack tally extended, you can be sure the engineer on Santa Fe no. 3929 is determined to pull ahead of the crewed F unit. Both are highly detailed Bachmann 4-6-4 and the Athearn F7 are the work of Scott Thomas. Scott also built the mini-size HO scale 2 x 4-foot module, which is part of the Kalgoorlie, Kansas, Model Railroad Club. Kenny Schober took the photo.

Bill Kennedy of Muncie, Ind., shot this scene on his HO Wabash Valley RR. The maincrew is anxious to get that diesel operational, but has had to wait until the flatbed truck is unloaded and moved. The building is a modified Pine Scale Models kit, and those shiny new bleachers actually crawl from an O scale kit for a Japanese electric locomotive.

Mike Nemeth took this shot of a westbound freight train, left, arriving at Morningside on the Pyngawa's (R) scale West Hill Division of the Great Northern Ry. He lives in Troy, Vt., and his layout will be one of those open during the Green Mountain Express opting convention of the NMRA in Northampton, Region. The convention will be held May 14-16, in Burlington, Vt. For information contact Pat Settinger, 20 Preston Dr., Vernon, CT 06066; telephone 203-643-1835.

South Shasta Lines Golden Spike

After 10 years Cantara Shasta has completed its 11-mile South Shasta Line. The arrival of the first South Shasta train into Fairbanks was commemorated with the Golden Spike Ceremony seen here. Yes, the spike is real gold and Godfrey drove it with the sledgehammer. The South Shasta Line will be open to the public every Tuesday in April and May from 1 to 4 p.m. The layout is located in Gordon, Calif., 125 miles north of Sacramento, and just off Interstate 5. Look for the Alabama Ranch city Hollow Rd., 2 miles south of Fairfax. The postal number is 555-343-1389. Admission is $4.5 for adults and $3 for children, and it covers the model railroad, a photo trivia quiz, and a souvenir brochure of vintage train memorabilia.

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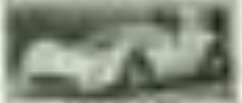

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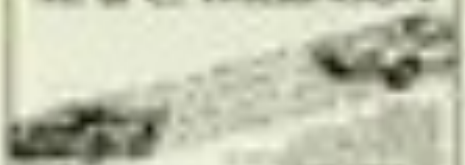

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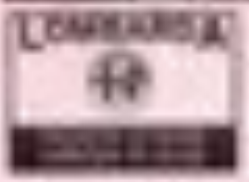

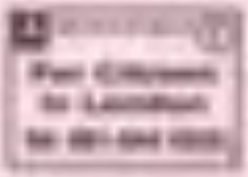

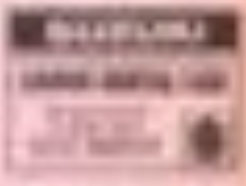

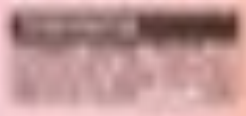

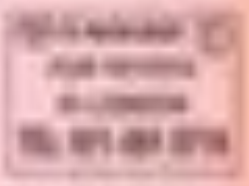

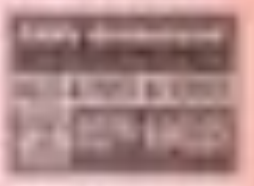

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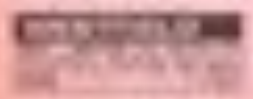

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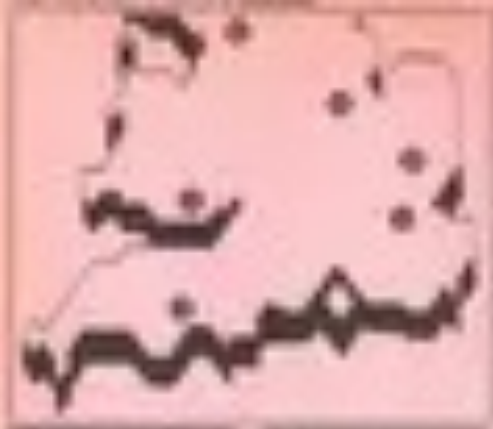

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